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EUROPEAN PATENT APPLICATION

Description

BACKGROUND OF THE INVENTION

Field of the Invention

(51) Int Cl?; G06F 3/12

since the client and a print server or output shop

line, since the client and a print server or output shop having the remote server are required to be connected to the network so as to transfer data at the high resolution image file, the access time to the network increases and the communication costs rises.

[0007] As a second print system, print image may be kept at a print server so that a print image can be output in response to an output instruction, without transferring the print image to the network. In this case, a data transmission cost to the network, a user is required to pay a large amount of investment in terms of cost, when an already existing small DTP shop and like participate in network print services.

[0008] A user operates upon a computer to acquire remote data via the network. Within this method, a user connects his computer to the network and designates desired data to acquire the data from a remote computer connected to the network. Connection to the network may be realized by using a mobile communications equipment or like through dial-up or other methods.

[0009] Such a connection method is positively performed at any desired time by a user to acquire data, however, an output apparatus such as a printer is always connected to the network.

[0010] When print data is received at a printer or print server via the Internet, it is possible to know the size of reception data in advance. However, even if a plurality of data exists due to the received, a data request is performed once. Therefore, it takes in some cases a long time to receive all the data. During this data reception, other tasks are stopped.

[0011] According to the prior arts described above, since print images are collectively kept at a center server, although a user can instruct a desired output apparatus to print an image, a running cost incurs and a service quality is lowered because of a large data transmission amount. Print images are kept at output apparatuses, so that the performance of easy-to-use is degraded. In addition, the output apparatuses are required to be always connected to the network, and a connection method is limited. For example, a data output apparatus such as a printer is required to be always connected to the network, and it is impossible to connect the output apparatus itself by using a mobile communications equipment through dial-up connection.

[0012] If data is to be transmitted again because of disconnection of a network, a user is required to again instruct a transmission of each data. It is therefore difficult to transfer a large amount of print data at the same time.

Related Background Art

[0013] With recent rapid progress of computer performances, it becomes possible to refer to an image on a computer or edit it. With recent advancement on network techniques such as Internet prevailed to general societies, it is common to obtain/buy image data via a network. There are services for printing image data on a network at a remote printer.

[0014] Under such environments, a great amount of digital data such as image data is kept at a plurality of computers. It is becoming important to network data such as image data is kept efficiently and how flexibly an operation such as changing a data keeping location is performed.

[0015] According to the prior art, digital data such as an image file kept on a network is identified by using Uniform Resource Locator (hereinafter called URL) widely used by the Internet, and a data acquisition request is transmitted to the computer which keeps the data and is identified by a portion of URL. According to this prior art, a campus name and a keeping location name in URL are often names assigned to physical data keeping locations. If a user knows only URL, data can be acquired by issuing a data acquisition request to the computer which keeps the data, even if the data keeping location is changed.

[0016] However, the computer name and data keeping location name in URL cannot be changed. Therefore, if a physical data keeping location is to be changed, it is required to be changed under this condition that URL is not changed. Namely, if it is necessary to keep data which cannot be covered by the processing ability and data capacity of a computer to be identified by URL, it is difficult to change the data keeping location. URL memorized by users may be changed, or a processing efficiency of the computer may be lowered. There is therefore a possibility that usability of the system is lowered.

[0017] When an image is printed by using such a system, a client designates URL and acquires an image file from a data keeping location. In order to request for printing an image file edited at a client computer, the edited image file of a high print resolution is transferred from the client computer to a center server and to a remote printer. This increases a network load. At the same

[0018] In network print services, there are services for printing image data on a

[0019] Under such environments, a great amount of digital data such as image data is kept at a plurality of computers. It is becoming important to network data such as image data is kept efficiently and how flexibly an operation such as changing a data keeping location is performed.

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[0021] However, the computer name and data keeping location name in URL cannot be changed. Therefore, if a physical data keeping location is to be changed, it is required to be changed under this condition that URL is not changed. Namely, if it is necessary to keep data which cannot be covered by the processing ability and data capacity of a computer to be identified by URL, it is difficult to change the data keeping location. URL memorized by users may be changed, or a processing efficiency of the computer may be lowered. There is therefore a possibility that usability of the system is lowered.

[0022] When an image is printed by using such a system, a client designates URL and acquires an image file from a data keeping location. In order to request for printing an image file edited at a client computer, the edited image file of a high print resolution is transferred from the client computer to a center server and to a remote printer. This increases a network load. At the same

[0023] Both the conventional print systems require a large amount of investment in terms of cost. When an already existing small DTP shop and like participate in network print services.

[0024] A user operates upon a computer to acquire remote data via the network. Within this method, a user connects his computer to the network and designates desired data to acquire the data from a remote computer connected to the network. Connection to the network may be realized by using a mobile communications equipment or like through dial-up or other methods.

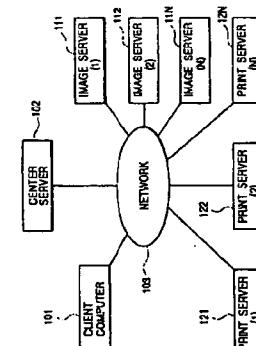
[0025] Such a connection method is positively performed at any desired time by a user to acquire data, however, an output apparatus such as a printer is always connected to the network.

[0026] When print data is received at a printer or print server via the Internet, it is possible to know the size of reception data in advance. However, even if a plurality of data exists due to the received, a data request is performed once. Therefore, it takes in some cases a long time to receive all the data. During this data reception, other tasks are stopped.

[0027] According to the prior arts described above, since print images are collectively kept at a center server, although a user can instruct a desired output apparatus to print an image, a running cost incurs and a service quality is lowered because of a large data transmission amount. Print images are kept at output apparatuses, so that the performance of easy-to-use is degraded. In addition, the output apparatuses are required to be always connected to the network, and a connection method is limited. For example, a data output apparatus such as a printer is required to be always connected to the network, and it is impossible to connect the output apparatus itself by using a mobile communications equipment through dial-up connection.

[0028] If data is to be transmitted again because of disconnection of a network, a user is required to again instruct a transmission of each data. It is therefore difficult to transfer a large amount of print data at the same time.

FIG. 1



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[0114] When a user orders a print, a print order status cannot be referred to until the order is transmitted to a center server via the network and an actual print is output. Furthermore, if there is a simple order miss such as erroneous contents of the order, it is necessary to save another correct order together with the erroneous order.

[0115] If a print server cannot process a print order received from a center server, from some reasons such as management trouble, it is necessary for a print server (print shop) clerk to explain the reason to the user and postpone a delivery date or provide other counter-measures.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] Fig. 1 is a diagram showing a system structure according to a first embodiment of the invention.

[0023] Fig. 2 is a block diagram showing the system structure of a center server, an image server, and a client computer.

[0024] Fig. 3 is a block diagram showing the system structure of a print server.

[0025] Fig. 4 is a diagram showing the module structure of a center server according to the invention.

[0026] Fig. 5 is a diagram showing the module structure of a client according to the invention.

[0027] It is a second concern of the present invention to freely and easily make a change in image data keeping locations and the like without lowering user convenience, by definitely assigning an identifier to a design or image data and managing and identifying each image data keeping location by using the identifier, and flexibly selecting a data distribution destination in accordance with a complete data processing ability, by assigning each identifier with a plurality of physical data files.

[0028] It is a third concern of the present invention to allow an output apparatus to use dial-up connection to improve the degree of freedom of installation location of the output apparatus, and to allow stable use of the dial-up connection even under unstable network environments such as mobile communications, by transmitting only the data still not transferred when the network connection is interrupted, without any user operation.

[0029] In order to solve the above problems, an image collection apparatus of this invention comprises: managing 9 means for managing position information indicating a keeping location of image data; image collecting means for collecting image data designated by the print order in accordance with the print order and the position information managed by the managing means, when the print order is received from an external apparatus; and print instructing means for transmitting the image data collected by the image collecting means and a print request basing up the print order to a print controller.

[0030] A print controller of this invention comprises: image managing means for managing position information indicating a keeping location of image data; editing means for acquiring image data designated by the print order from the keeping location in accordance with the

age collection destination determining process.

[0031] Fig. 21 is a flow chart illustrating an order status updating process in the image collection destination determining process.

[0032] Fig. 22 is a flow chart illustrating an original image transmission process to be executed by the image server or print server.

[0033] Fig. 23 is a diagram showing an example of the contents of an original image transmission data file.

[0034] Fig. 24 is a flow chart illustrating an image reception process to be executed by the center server.

[0035] Fig. 25 is a flow chart illustrating a print order transmission process to be executed by the center server.

[0036] Fig. 26 is a flow chart illustrating a print order process to be executed by the print server.

[0037] Fig. 27 is a flow chart illustrating a print process to be executed by the print server.

[0038] Fig. 28 is a flow chart illustrating a print command process to be executed by the center server according to the fifth embodiment.

[0039] Fig. 29 is a flow chart illustrating an original image microcopy/paste process to be executed by the image server or print server.

[0040] Fig. 30 is a block diagram showing the data structure in a transmission box.

[0041] Fig. 31 is a block diagram showing the data structure in a reception box.

[0042] Fig. 32 is a diagram illustrating a transmission control information table in the transmission box and a reception control information table in the reception box.

[0043] Fig. 33 is a diagram illustrating a processor information table in the reception box.

[0044] Fig. 34 is a flow chart illustrating a process of registering a transmission file in the transmission box.

[0045] Fig. 35 which is comprised of Figs. 35A and 35B is a flow chart illustrating a data transmission/reception process to be executed by the print server.

[0046] Fig. 36 is a flow chart illustrating a data transmission/reception process to be executed by the center server.

[0047] Fig. 37 is a diagram showing a system structure according to a second embodiment of the invention.

[0048] Fig. 38 shows the module structure of a center server according to a third embodiment of the invention.

[0049] Fig. 39 shows the module structure of a print server according to the third embodiment of the invention.

[0050] Fig. 40 is a flow chart illustrating a process of displaying a user order list to be executed by the center server.

[0051] Fig. 41 shows a user order confirmation window displayed on a client computer.

[0052] Fig. 42 is a flow chart illustrating an order cancellation/deletion process to be executed by the center server.

[0053] Fig. 43 shows a reception order list window displayed at the print server.

[0054] Fig. 44 is a flow chart illustrating a return order transmission process to be executed by the print server.

[0055] Fig. 45 shows an example of a script used for a return order reception process.

[0056] Fig. 46 is a flow chart illustrating a return order reception process to be executed by the center server.

[0057] Fig. 47 is a diagram showing a system structure according to a fourth embodiment of the invention.

[0058] Fig. 48 is a diagram showing an example of a window displayed by a reception order selector of the fourth embodiment.

[0059] Fig. 49 is a diagram showing an example of a window displayed by an automatic reception selector of the fourth embodiment.

[0060] Fig. 50 is a diagram showing an example of a window displayed by an automatic reception selector of another of the four embodiments.

[0061] Fig. 51 is a diagram showing a system structure according to a fifth embodiment of the invention.

[0062] Fig. 52 is a user group management table for managing information on images transmitted from the client computer.

[0063] Fig. 53 is a flow chart illustrating an image registration process to be executed by the center server according to the fifth embodiment.

[0064] Fig. 54 is a flow chart illustrating an edition image supply process according to the fifth embodiment.

[0065] Fig. 55 is a flow chart illustrating a process of <System Structure>

[0066] Fig. 1 shows the structure of the whole system according to the first embodiment of the invention.

[0067] In Fig. 1, reference numeral 101 represents an information processing apparatus (a computer system including a CPU, a P-ROM, a RAM, an HDD and the like) to be described later with reference to Fig. 2, which a user or client of the system of this embodiment directly operates upon, for example, at home. The information processing apparatus 101 is hereinafter called a client computer.

[0068] The client computer 101 has: a function of browsing information such as images stored in a center server 102 to be described later, via a network 103; a function of acquiring the information; and a function of issuing a print instruction or image print order at a print server to be described later, to the center server 102.

[0069] The print instruction or image print order is handled by the center server 102.

[0070] The center server 102 is an image collecting apparatus of the invention which executes a process in response to a request mainly from the client computer 101.

[0071] The center server 102 has: a function of storing images to be transmitted to the client computer 101 in

a program ROM and a data ROM, the former storing fundamental software (OS) which is a system program for controlling the information processing apparatus, (image collecting apparatus, image storing apparatus), and the latter storing information necessary for running the system. In place of ROM 1003, an HDD 1009 can be described later if used in some cases.

[0102] Reference numeral 1004 represents a network interface (NET) which controls the data transfer between the information processing apparatus (image collecting apparatus, image storing apparatus) via the network and analyzes the connection status.

[0103] Reference numeral 1005 represents a video RAM (VRAM) on which an image to be displayed on the screen or a CRT 1006 to be described later is developed, and which controls the image display, the image indicating an operation status of the information processing apparatus (image collecting apparatus, image storing apparatus).

[0104] Reference numeral 1006 represents a display apparatus such as a CRT display. The display apparatus 1006 is connected to a CRT.

[0105] Reference numeral 1007 represents a controller for controlling signals input from an external input apparatus 1008.

[0106] The external input apparatus 1008 receives any operation entered by a user of the information processing apparatus, and may be a keyboard on a pointing device such as a mouse. The external input apparatus 1008 is hereinafter called simply a KB.

[0107] The hard disk drive (HDD) 1009 is used for storing application programs and data such as image information. In this embodiment, the application program may be a software program for realizing various functions constituting the embodiment.

[0108] The details of a flow chart illustrating each program will be later given with reference to Fig. 17 to 22, Figs. 24 to 29, and Figs. 34 to 35.

[0109] Reference numeral 1010 represents an order input/output apparatus which uses a removable disk such as a floppy disk and a CD-ROM. The external input/output apparatus 1010 is used for reading the application program from the storage medium, and is hereinafter called simply a FBD.

[0110] Application programs and data to be stored in HDD 1009 may be stored in FBD 1010.

[0111] Reference numeral 1000 represents an input/output bus (address bus, data bus, and control bus) for connection of respective units.

<Block diagram of print server>

[0112] Fig. 3 is a block diagram showing the system structure of the information processing apparatus as the embodiment of the invention. In this embodiment, the internal structures of the center server 102 as the image collecting apparatus, the image servers 111, 112 and 11N as the image storing apparatus, and the client computer 101 are the same. Therefore, the hardware structure thereof will be described collectively with reference to Fig. 2.

[0113] In Fig. 2, reference numeral 1001 represents a central processing unit (hereinafter called a CPU) for controlling the information processing apparatus.

[0114] Reference numeral 1002 represents a random access memory (hereinafter called a RAM) which functions as the main memory of CPU 1001 and provides a memory area for programs and an execution area and a data area for the programs.

[0115] Reference numeral 1003 represents a read-only memory (hereinafter called a ROM) for storing the operation sequence of CPU 1001. ROM 1003 includes

which functions as the main memory of CPU 2001 and provides a memory area for programs and an execution area and a data area for the programs. This apparatus 2014 is hereinafter simply called a scanner.

[0116] Reference numeral 2000 represents a ROM for storing the operation sequences of CPU 2003 for running the system. In place of ROM 2003, an HDD 2009 can be described later if used in some cases.

[0117] Reference numeral 2004 represents a network interface (NET) which controls the data transfer to and from other information processing apparatuses such as the center server 101 via the network and analyzes the connection status.

[0118] Reference numeral 2005 represents a VRAM on which an image to be displayed on the screen of a CRT 2006 to be described later is developed, and which controls the image display, the image indicating an operation status of the information processing apparatus such as a CRT display. The display apparatus 2006 is hereinafter called a CRT.

[0119] Reference numeral 2007 represents a control apparatus for controlling signals input from an external input apparatus.

[0120] Reference numeral 2008 represents a display apparatus which allows to search a document (text, image, or a combination of text and image) requested from the Internet, from HDD 1009 and to transmit the searched document. The document supplier 401 is generally called an internet server program or WWW server program which can transmit a document and in addition, can use an application program stored in HDD 1009 or the like to request a document from the client computer 101 via the network, for example, the Internet, from HDD 1009 and to transmit the searched document.

[0121] An edit image supplier 402 is an application program which allows to search a document (text, image, or a combination of text and image) requested from the client computer 101 via the network, for example, the Internet, from HDD 1009 and to transmit the searched document.

[0122] An order taker 403 is an application program which allows to receive a print order transmitted from the client computer 101, to analyze the print order to store the analyzed result in an order management table 416 to be described later, to transmit taken order results to the client computer 101 from a display/audit image storage 411 to be described later, and after the display/audit image data is converted into an image format used by the client computer 101, to transmit the converted image data to the client computer 101 via the display/audit image supplier 402.

[0123] An order taker 404 is an application program which allows to receive a print order transmitted from the client computer 101, to analyze the print order to store the analyzed result in an order management table 416 to be described later, to transmit taken order results to the client computer 101 via the document supplier 401, and to use an image collection 405 for collecting images to be described later by developing it from HDD 1009 or the like onto RAM 1002.

[0124] An image register 404 is an application program which is developed by a center transmission program which is developed by a center transmission program.

[0125] Fig. 4 shows the structure of each processing component and management data in the center server 102. In Fig. 4, each of the processing components 401, 402, 403, 404, 405, 406 and 407 is an application program which is used by developing it from ROM 1003, HDD 1009 or FBD 1010 upon RAM 1002. Reference numerals 411, 412, 413, 414, 415, 416, 417, 418 and 419 represent data stored in HDD 1008.

[0126] A document supplier 401 is an application program which allows to search a document (text, image, or a combination of text and image) requested from the client computer 101 via the network, for example, the Internet, from HDD 1009 and to transmit the searched document. The document supplier 401 is generally called an internet server program or WWW server program which can transmit a document and in addition, can use an application program stored in HDD 1009 or the like to request a document from the client computer 101 via the network, for example, the Internet, from HDD 1009 and to transmit the searched document.

[0127] An edit image supplier 402 is an application program which allows to search a document (text, image, or a combination of text and image) requested from the client computer 101 via the network, for example, the Internet, from HDD 1009 and to transmit the searched document.

[0128] An order taker 403 is an application program which allows to receive a print order transmitted from the client computer 101, to analyze the print order to store the analyzed result in an order management table 416 to be described later, to transmit taken order results to the client computer 101 via the display/audit image storage 411 to be described later, and after the display/audit image data is converted into an image format used by the client computer 101, to transmit the converted image data to the client computer 101 via the display/audit image supplier 402.

[0129] An order taker 404 is an application program which allows to receive a print order transmitted from the client computer 101, to analyze the print order to store the analyzed result in an order management table 416 to be described later, to transmit taken order results to the client computer 101 via the document supplier 401, and to use an image collection 405 for collecting images to be described later by developing it from HDD 1009 or the like onto RAM 1002.

[0130] The edit image supplier 402 and order taker 403 are an application program which is developed by the document supplier 401 from HDD 1009 or the like onto RAM 1002 in response to a request from the client computer 101 via the document supplier 401, and to use an image collection 405 for collecting images to be described later by developing it from HDD 1009 or the like onto RAM 1002.

[0131] The edit image supplier 402 and order taker 403 are an application program which is developed by the document supplier 401 from HDD 1009 or the like onto RAM 1002 in response to a request from the client computer 101 via the document supplier 401, and to use an image collection 405 for collecting images to be described later by developing it from HDD 1009 or the like onto RAM 1002.

[0132] An image register 404 is an application program which is developed by a center transmission program which is developed by a center transmission program.

ception controller 407 to be described later from HDD 1009 or the like onto RAM 1002. This application program receives position change data (new registration, delete, copy and move) of a print image and an edit image transmitted from the image server 111 or print server 121 and update and manage a position management table 412 to be later described and has a function of storing the edit image in the display/edit image storage 411 to be described later. This application program has also a function of transmitting the print image transmitted from the move source image server 111 or print server 121 to a move target image server 111 or print server via a center transmission/reception controller 407, if the position change data is data representative of a move of the print image.

[0125] The image collector 405 is an application program which is developed from HDD 1009 or the like onto RAM 1002 in response to an activation instruction from the order taker 403 or the center transmission/reception controller 407 to be described later. The image collector 405 has a first function of determining a storage location of a print original image necessary for printing stored in the orders management table 416 to be described later; a second function of transmitting, via the center transmission/reception controller 407, a print image (e.g., bitmap image of 64 × 64 pixels or the like) with a low resolution corresponding to all images users can use. This storage 411 stores display images and edit images to be supplied in response to an image acquisition request from a user received via a network browser or parser 502 to be described later or his document supplier 401. The display image (e.g., bitmap image of 64 × 64 pixels or the like) has a lowest resolution and is displayed on the network browser 502. The edit image (e.g., visual image of 1/4 base, 1/16 base or the like) is used by a data processor 501 to be described later. Image images are stored at directory assigned to respective user ideas in correspondence to the transmission data limit of each user ID possessed by the document supplier 401, and each image file has a table which is used for searching an image file corresponding to an image ID to be later described with reference to Fig. 9.

[0126] The original image position management table 412 is a table which manages keeping locations of print images, as will be later described with reference to Fig. 8.

[0127] A server management table 413 is a table which manages information on the image server 111 and print server 121, as will be later described with reference to Fig. 11.

[0128] The temporary image storage 414 is a space for storing print images (e.g., original images, 1/16 base images) necessary for printing until the printing is completed.

[0129] An order status table 415 is used for managing the progress status of a print order, as will be later described with reference to Fig. 10.

[0130] The order management table 416 stores print order data, as will be later described with reference to Fig. 9.

[0131] An edit image position management table 417 manages a correspondence between a path name and an image ID of an image file stored in the display/edit image storage 411, by using the same layout as that of the original image position management table to be later

described with reference to Figs. 12A and 12B.

[0135] The center transmission box 418 and transmission/reception data, in response to a data transmission/reception start request received by the image server 111 or print server 121 via NETIF 1004, and a function of storing reception data, received from the image server 111 or print server 121 in a center transmission box 419 to be later described and using an application program for analyzing the reception data and processing it by developing the application program from HDD 1009 or the like upon RAM 1002.

[0136] Data transfer to and from the image server 111 or print server 121 is executed in response to a transmission/reception start request from the image server 111 or print server 121. Therefore, an optimum transmission/reception cycle can be established in accordance with the network connection state (permanent connection via a dedicated line, temporary connection by dial-up).

[0137] The display/edit image storage 411 stores images of a low resolution corresponding to all images users can use. This storage 411 stores display images and edit images to be supplied in response to an image acquisition request from a user received via a network browser or parser 502 to be described later or his document supplier 401. The display image (e.g., bitmap image of 64 × 64 pixels or the like) has a lowest resolution and is displayed on the network browser 502. The edit image (e.g., visual image of 1/4 base, 1/16 base or the like) is used by a data processor 501 to be described later. Image images are stored at directory assigned to respective user ideas in correspondence to the transmission data limit of each user ID possessed by the document supplier 401, and each image file has a table which is used for searching an image file corresponding to an image ID to be later described with reference to Fig. 9.

[0138] The original image position management table 412 is a table which manages keeping locations of print images, as will be later described with reference to Fig. 8.

[0139] A server management table 413 is a table which manages information on the image server 111 and print server 121, as will be later described with reference to Fig. 11.

[0140] The temporary image storage 414 is a space for storing print images (e.g., original images, 1/16 base images) necessary for printing until the printing is completed.

[0141] An order status table 415 is used for managing the progress status of a print order, as will be later described with reference to Fig. 10.

[0142] The print order placing function of the data processor 501 may be performed by the order placer of the center server 102 and the data display function and print order data transmitting function of the expander may be performed by the network browser 502. In this case, the invention can be reduced in practice without the data processor 501 and expander 503.

described with reference to Figs. 12A and 12B.

[0143] Fig. 5 is a diagram showing the structure of the information processing apparatus or client computer 101 actually used by a user. The client computer 101 has the data processor 501, network browser or parser 502 and an expander 503, as the application programs which are used by being developed from ROM 1009, HDD 1005 or FDD 1010 upon RAM 1002.

[0144] A print image register 601 is an application program for new registration, move, copy and delete of a print image, and has: a function of reading print original images stored in an external storage such as CD-ROM and ZIP by using FDD 1010 and storing the read original images in a print original image storage 611 to be described later. In response to an operation entered by a manager in the print original image storage 611, it also has: a function of updating an original image position management table 612 to be described later; a function of generating display/edit images; and a function of transmitting original image position information, display/edit images and the like to the center server 102 via a local transmission/reception controller 603 to be described later.

[0145] A print image transmitter 602 is an application program which has a function of analyzing a print image transmission request received by the local transmission/reception controller 603 to be described later from the center server 102, searching necessary print image data from the print original image storage 611 to be described later by using the original image management table 612 to be described later, and transmitting the necessary print images to the local transmission/reception controller 603 via the local transmission/reception controller 603.

[0146] The local transmission/reception controller 603 has: a function of managing data generated by the application program such as print image register 601 of the image server 102 and stored in the local transmission/reception controller 603 to be described later from the center server 102, transmitting a transmission/reception start request to the center server 102 via NETIF 1004, and extracting transmission data from the local transmission box 613 and transmitting it; and a function of storing reception data received from the center server 102 in the local reception box 614 and analyzing the reception data to use the application program for processing the reception data by developing it from HDD 1009 or the like onto RAM 1002.

[0147] The print original image storage 611 stores print original image files of a high resolution in a removable disk which can be read and written by HDD 1009 or FDD 1010.

[0148] The original image position management table 612 is a table which manages path names of print images by storing them in HDD 1009 as database or searchable file, as will be later described with reference to Fig. 12.

[0149] The local transmission box 613 and local transmission data for the image server 111 or print server 121 to be later described and using the same layout as that of the original image position management table to be later

ception box 614 are used when transmission data and reception data for the center server 102 is stored in HDD 1003.

<Print server>

[0160] FIG. 7 is a diagram showing the processing components in the print servers 121, 122 and 123 and management data. Each of processing components 701, 702, 703, 704 and 705 is an application program which is used by developing it from ROM 2003, HDD 2009 or FDD 2010 onto RAM 1002.

[0161] An order output manager 701 is an application having a function of managing the progress status of a print order transmitted from the center server 102. This application program has: a function of taking a print order from the center server 102 via a local transmission/reception controller 703 to be later described, analyzing the print order and storing the analyzed results in an order management table 711 to be later described; a function of generating print data in accordance with a print operation command by an operator from KB 1005, storing the print data in a print spool 712 to be later described, and sending a print start instruction to a print controller 702 to be later described; and a function of receiving a print completion notice from the print controller 702, generating print completion notice data and transmitting the print completion notice data to the center server 102 via the local transmission/reception controller 703.

[0162] The print controller 702 is an application program having a function of generating film print image and sending it to PRTC 2011 to print it. This application program has: a function of sending a final print image by using print original images in the print spool 712 to be described later in accordance with the information in the print spool 712; and a function of sending a completion notice to the order output manager 701 when a print operation is completed.

[0163] The local transmission/reception controller 703 is similar to the local transmission box 713 and local reception box 714 are similar to the local transmission box 613 and local reception box 614 of the image server, and are used when transmission data and reception data for the center server 102 is stored in HDD 2009.

[0164] The print controller 702 is an application program having a function of generating film print image and sending it to PRTC 2011 to print it. This application program has: a function of receiving data received from the center server 102 in a local reception box 714 and analyzing the reception data to use the application program for processing the reception data by developing it from HDD 2009 or the like onto RAM 2002.

[0165] A print image register 704 is similar to the print image register of the image server 111, and is an application program for new registration, move, copy and delete of a print image. This application program has: a function of reading print original images stored in an ex-

ternal storage such as CD-ROM by using FDD 2010 and storing the read original images in a print original image storage 716 to be described later, in response to an operation entered by a manager from KB 2008; and a function of deleting images in the print original image storage 716. It also has a function of updating an original image position management table 715 to be described later; a function of generating display/edit images; and a function of transmitting original images position information, displayed/images and the like to the center server 102 via a local transmission/reception controller 703 to be described later.

[0166] A print image transmitter 705 is similar to the print image transmitter 602 of the image server and is an application program which has a function of encrypting a print image transmission request received by the local transmission/reception controller 703, searching the necessary print images from the print original image storage 716 to be described later by using the original image management table 715 to be described later, and transmitting the necessary print images to the request transmitting side via the local transmission/reception controller 703.

[0167] The order management table 711 is a data base or search table stored in HDD 2009 and has print order data as will be described later with reference to FIG. 8. Band an order status table having the print spool 712 and local reception box 714 are similar to the local transmission box 613 and local reception box 614 of the image server, and are used when transmission data and reception data for the center server 102 is stored in HDD 2009.

[0168] The original image position management table 715 is similar to the original image position management table 612 of the image server 111, and is a table for managing the path names of print images as will be later described with reference to FIG. 12. This table is stored as a database or searchable film in HDD 2009.

[0169] The print original image storage 716 is similar to the print original image storage 611 of the image server 111 and stores print original image files of a high resolution in a removable disk which can be read and written by HDD 2008 or FDD 2010.

[0170] In this embodiment, the print server 121 has print original images and a management function therefor. It includes the functions of the image server 121 and reduce a transmission load. Even if the print server 121 is not provided with the image server functions such as print image register 704, print image transmittor 705, original image position management table 715 and print original image storage 716, the embodiment can be reduced in practice.

[0171] If NETTF 2004 of the print server 121 or NET

<ID system>

[0172] FIGS. 9A and 9B are diagrams explaining an image ID and an order ID of this embodiment.

[0173] In FIG. 9A, reference numeral 801 represents an image ID which is partitioned into three parts by a delimiter ("/"). In its embodiment, the image ID is assigned to each print original image when the original image is registered.

[0174] Reference numeral 911 represents the name of a center server 102.

[0175] Reference numeral 912 represents an ID of a server which registered the print original image having the image ID. In this embodiment, this ID is an ID of either the image server 111 or print server 121. This server ID 912 is uniquely assigned to the image server 111 and print server 121 connected to the center server 102, and also assigned to the center server 102.

[0176] The server ID 912 is used for maintaining the print order data also stored in the order management table 711 of the print server 102 and managed by the order output manager 701. The data structure of print order data and various items used in this embodiment will be described with reference to FIG. 8.

[0177] In FIG. 8, reference numeral 901 represents a print order which is a unit of a print request by a user. The print order is identified by an order ID unique to this embodiment. The print order 901 is constituted of one or more sub-orders 802 and includes print order information such as an identifier of a print server at which a user wishes to print an image.

[0178] In FIG. 9B, reference numeral 902 represents an order ID which is partitioned into three parts by a delimiter ("/"). In this embodiment, the order ID is assigned to each print order placed by a user, and the center server ID 902 assigns the order ID when a print order is placed.

[0179] Reference numeral 913 represents a numerical number uniquely assigned to an original image when the image is registered in the server. This numerical number may be a time when the registration process is executed.

[0180] In this embodiment, a print original image can be uniquely discriminated by using the center server name 911, server ID 912 and numerical number 913.

[0181] Reference numeral 914 represents an order ID which is identified by the user who placed the print order.

[0182] In FIG. 9B, reference numeral 903 represents a server ID which is identified by a sub-order 802 which is a unique serial number (001, 002,...) in the print order. The sub-order is constituted of one or more order items 803 and includes sub-order information such as a paper size, the number of output copies and so on.

[0183] The order item 803 constituting the sub-order 802 is constituted of edit information 804 or image 805.

[0184] The edit information 804 is a script which writes a print position of each image by page descriptive language.

[0185] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0186] FIG. 8 shows the structure of print order data used in this embodiment. The print order data has the data structure for storing print order data used in this embodiment. The print order data herein described is transmitted from the center server to the print server.

[0187] The print order data is stored in the order management table 416 of the center server 102 by the order taker 403, and increased by the order progress manager 406. The print order data is also stored in the order management table 711 of the print server 102 and managed by the order output manager 701. The data structure of print order data and various items used in this embodiment will be described with reference to FIG. 8.

[0188] In FIG. 8, reference numeral 901 represents a print order which is a unit of a print request by a user.

[0189] The print order 901 is constituted of one or more sub-orders 802 and includes print order information such as an identifier of a print server at which a user wishes to print an image.

[0190] In FIG. 9B, reference numeral 902 represents an order ID which is partitioned into three parts by a delimiter ("/"). In this embodiment, the order ID is assigned to each print order placed by a user, and the center server ID 902 assigns the order ID when a print order is placed.

[0191] Reference numeral 913 represents a numerical number uniquely assigned to an original image when the image is registered in the server. This numerical number may be a time when the registration process is executed.

[0192] In this embodiment, a print order can be uniquely discriminated by using the user ID 914, server ID 915 and numerical value 916.

[0193] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0194] FIG. 10 shows the structure of print order data used in this embodiment. The print order data has the data structure for storing print order data used in this embodiment. The print order data herein described is transmitted from the center server to the print server.

[0195] The print order data is stored in the order management table 416 of the center server 102 by the order taker 403, and increased by the order progress manager 406. The print order data is also stored in the order management table 711 of the print server 102 and managed by the order output manager 701. The data structure of print order data and various items used in this embodiment will be described with reference to FIG. 8.

[0196] In FIG. 8, reference numeral 901 represents a print order which is a unit of a print request by a user.

[0197] The print order 901 is constituted of one or more sub-orders 802 and includes print order information such as an identifier of a print server at which a user wishes to print an image.

[0198] In FIG. 9B, reference numeral 902 represents an order ID which is partitioned into three parts by a delimiter ("/"). In this embodiment, the order ID is assigned to each print order placed by a user, and the center server ID 902 assigns the order ID when a print order is placed.

[0199] Reference numeral 913 represents a numerical number uniquely assigned to an original image when the image is registered in the server. This numerical number may be a time when the registration process is executed.

[0200] In this embodiment, a print order can be uniquely discriminated by using the user ID 914, server ID 915 and numerical value 916.

[0201] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0202] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0203] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0204] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0205] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0206] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

[0207] FIG. 10 shows the order status table 415 used by the embodiment. The status table 415 is stored in HDD 1009 of the center server 102 as a database or searchable file. Many of the image collector 405 controls each process to be later described with reference to flow charts, by managing the collection status of print engines of each print order by using the table. This table may

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be used by storing it in RAM 1002 of the center server.

[0184] In Fig. 10, reference numeral 201 represents an order ID which identifies a print order taken by the center server and presently processed or already processed.

[0185] Reference numeral 202 represents a sub-order ID for identifying a sub-order and constituting the print order identified by the order ID.

[0186] Reference numeral 203 represents an image ID of a print original image used by the term constituting the sub-order identified by the sub-order ID 202.

[0187] Reference numeral 204 represents a collection status of print original images of the corresponding order and sub-orders. This collection status is represented by either "image being collected" or "image collected".

[0188] Data of the order status table 415 is stored in rows 211 to 214.

[0189] In Fig. 10, a cell with (c) indicates that the cell has no data. The table manages the status in the order and sub-orders until as well as the separation status of each print image. For example, the data in the fourth row 214 in Fig. 10 includes the order ID of "USRN/PC1/0002", the sub-order ID of "0001", the image ID of "CANON/PFS/19950200027", and the status of image collected". This means that the print image data already exists at the center server and that the preparation is completed such as transmission preparation to the print server. The data at the third row 213 indicates that print images are not still prepared for the image ID "CANON/PFS/99860101075801" of the sub-order ID of "0001". The data at the second row 212 indicates that preparation is not completed for the order ID "0001", and the data at the first row 211 indicates that preparation is not completed for the order ID of "USRN/PC1/0002".

[0190] Although each print order may be stored as one data structure, in this embodiment, each of the print order data is stored both in the order management table and order status table, so as not to change each process in each of the flow charts as much as possible, which change may be caused by additional information of a print order.

<Server management table>

[0191] Fig. 11 shows the server management table used by the embodiment. The server management table is stored in HDD 1009 of the center server 102 as a database or searchable file. This table manages information on all the image servers and print servers connected to the center server 102. In this embodiment, the table is used by an original image position data managing process to be later described with reference to the flow chart shown in Fig. 15. This table may be stored in RAM 1002 of the center server.

[0192] In Fig. 11, reference numeral 1101 represents a server ID for definitely discriminating all the image

servers and print servers connected to the center server.

[0193] Reference numeral 1102 represents an image acquisition priority order which is used as a judgement condition when the same original image identified by an image ID is stored in a plurality of image servers.

The image acquisition priority order 1102 has a preset relative value corresponding to a transmission cost necessary for transmitting image data to the center server during an original image collection process to be described later. The transmission cost used herein is a total cost which includes not only the network transmission cost but also a time to be taken for transmitting image data in response to a request from the center server. The image acquisition priority order 1102 takes a value from 1 to 999. The smaller the number, the smaller the transmission cost necessary for image acquisition.

[0194] For example, if the server is in the same LAN as viewed from the center server, the value is set to 100. If the server is not in the same LAN but is always connected to the network, the value is set to "200". If the server is not in its same LAN and is not always connected to the network but connected through dial-up, the value is set to "300". If the server has a low process efficiency because of high access occurrence frequency although it is in the same LAN, the value is set to "100" + "20".

<Original image position management table>

[0195] Figs. 12A and 12B show original image position management tables used in the embodiment. The original image position management table is stored in HDD 1008 of the center server 102. HDD 1009 of the print server 111 and HDD 2009 of the center server 112, and HDD 2009 of the print server 121 as a database or searchable file. This table is used for identifying a storage location of an original image necessary for printing during each process to be described later. An original image position management table A at the center server shown in Fig. 12A stores usable print image data stored in all the image servers and print servers connected to the center server. An original image position management table B at the image server or print server shown in Fig. 12B stores usable print image data stored in HDD 1009 or HDD 2009 of the server and in FDD 1010 or FDD 2010. The original image position table may be stored in RAM 1002 or RAM 2002 of the server.

[0196] In Figs. 12A and 12B, reference numeral 1201 represents an image ID for each usable print image.

[0197] Reference numeral 1202 represents an owner ID for each print image which ID is definitely determined from the image ID. A call of this owner ID is made blank if an image is publicized irrespective of whether it is free or not.

[0198] Reference numeral 1203 represents a keeping location of print image data of the corresponding image ID. In the original image position management table A

of the center server 102, the keeping location 1203 is indicated by the server ID of the image server 111 or the server ID of the print server 112, having an image identifier by the corresponding image ID or the path name to the print image stored in HDD 1009 of the center server. The image position management table B is a table for the image server with the server ID of "1S01". The original image position management table 1215 of the table B corresponds to the original image position management data 1211 of the table A. Namely, in the table A, the server ID of "1S01" is stored in the keeping location 1203, and in the table B, the keeping location 1203 indicates the location of the image file identified by the path name of "E:\CANNON\PFS\19950200027.jpg" of the server.

[0199] In the original image position management table A, a plurality of values may be stored for one image identified by an image ID. In the original image position management table B of the image server or print server, the keeping location 1203 is indicated by the path name of a print image stored in HDD. Each original image can be identified by a combination of the original image position management tables A and B. Namely, as will be later described, a client designated only an image ID and the center server can recognize which server stores the image data identified by the image ID. The center server then passes the image ID and print data acquisition request to the server. The image data can be acquired by using the path name stored in the original image position management table B of the server.

[0200] Reference numeral 1204 represents additional information which is used for deleting an original image file, or for judging whether an original image file can be transmitted to the client computer.

[0201] In the original image position management table B of the image server 111 or print server 121, the keeping location 1203 is indicated by the path name of a print image stored in HDD 1009 or HDD 2009. Other items such as a registration date and an image size may also be stored. However, since these items are not relevant to the invention, they are managed.

[0202] Examples of original image position management data 1211, 1212, 1213, 1214, 1215, 1216, and 1217 stored in the original image position management table are shown. Fig. 12A shows an example of an original image position management table of the center server 102, and Fig. 12B shows an example of an original image position management table of the image server or print server.

[0203] For example, the original image position management data 1211 indicates that the owner identified by a person identified by the owner ID of "1S01" has a proprietary right of print image data of an image identified by the image ID of "CANON\PFS\19950200027" and the print server 111, and the print image data stored in HDD 2009 or FDD 2010 of the print server identified by the server ID of "1S01".

[0204] The original image position management data 1212 indicates that print image data of an image identified by the image ID of "CANON\PFS\19950200027" is stored in HDD 1009 or FDD 2010 of the print server identified by the server ID of "1S01".

[0205] The original image position management data 1213 is an example of a transmission data file.

[0206] In Fig. 13, reference numeral 1301 represents an example of a transmission file to be transmitted from the center server 102 to the print server 112, and reference numeral 1302 represents an example of a transmission file to be transmitted from the print server 121 to the center server 102.

[0207] As in the transmission file 1301, tags representative of the contents of various transmission data are stored in an area surrounded by a start tag "<CAML>" and an ending "</CAML>". In Fig. 13, reference numerals 1311, 1312, 1313, 1314, 1315, 1316, 1317, and 1318 represent transmission data. If the transmission data is a hierarchical structure including of low level transmission data, tags for low level transmission data are stored between the start and end tags, such as "<SUB-QDP>" tag or the transmission data 1312. A character string at the top of each tag is a tag name which is an identifier of the contents of the tag.

[0208] One transmission file may store a plurality of transmission data of an optional type.

[0209] In Fig. 13, the transmission data 1311 is a transmission/recption header/transmission data 1312. A character string at the top of each tag is a tag name which is an identifier of the contents of the tag.

[0210] One transmission file may store a plurality of transmission data between the start and end tags, such as "<SUB-QDP>" tag or the transmission data 1312. A character string at the top of each tag is a tag name which is an identifier of the contents of the tag.

[0211] One transmission file may store a plurality of transmission data of an optional type.

[0212] In Fig. 13, the transmission data 1311 is a transmission/recption header/transmission data 1312. A character string at the top of each tag is a tag name which is an identifier of the contents of the tag.

[0213] The transmission data 1312 is an order trans-

mission data used for transmitting a print order placed by a user to the print server 121. The order transmission data is used for transmitting the print order 801 described with Fig. 3. The order transmission data has low tags <1><UDFPs> and <CDRITPs> in order to store the data structure of the print order 801.

[0214] The transmission data 1313 is an original image transmission request transmission data which is used when the center server 102 requests the image server 111 or print server 121 to transmit a print original image file.

[0215] The transmission data 1314 is an image registration information transmission data which is used when the center server 102 requests the image server 111 or print server 121 to newly register or delete a print original image.

[0216] The transmission data 1315 is a transmission/reception header transmission data same as the transmission/reception header transmission data 1311.

[0217] The transmission data 1316 is an original image registration process transmission data which is used when the print server 121 requests the center server 102 to newly register or delete a print original image or transmits it to another print server or image server 111.

[0218] The transmission data 1317 is an original image transmission data which is used when the print server 102 transmits a print original image to the center server 102 in response to the original image transmission request transmission data 1313 transmitted from the center server 102.

[0219] The transmission data 1318 is a print result notice data which is used when the print server 121 notifies the center server 102 of a print process result of the print order in response to the order data 1312 transmitted from the center server 102.

[0220] Reference numeral 1321 represents various data stored in the transmission data file. It is a symbol such as "<" contained in the stored data. Its symbol may be erroneously analyzed as a start tag when the center transmission/capton controller 407 analyzes transmission data. Therefore, as in the case of the transmission data 1312, data different from the transmission data tag is stored as internal codes.

[0221] Reference numeral 1322 represents another file such as image data different from the transmission data file. This file 1322 stores its file name as a parameter in the tag.

<Script>

[0222] Fig. 14 shows an example of a script written by a page descriptive language used in the embodiment.

[0223] In Fig. 14, reference numeral 1401 represents a document created by the data processor 501 of the client computer 101, the document being finally printed by the print server 102. Reference numerals 1403 and 1404 represent images contained in the document. The document is created by DTP (desk-top publishing) and

is a file containing characters, figures and image data.

[0224] Reference numeral 1402 represents a script obtained by converting the document 1401 by the data processor 501 of the client computer 101 by using the page descriptive language. The script is transmitted to the print server 102 via the center server 102 and analyzed by the print controller 702.

[0225] The data processor 501 edits a document by acquiring edit images of a low resolution from the center server 102, so that the data transfer amount on the network can be reduced and a memory capacity necessary for editing can be reduced.

[0226] For an image description (image 1) in the script 1402, the data processor 501 stores the image data of the image data 1403 and 1404. The data processor 501 uses edit images of low resolution, whereas the print controller 702 uses print original images. Therefore, the path name of an image file to be used by the data processor 510 or print controller 702 is stored in a corresponding data of images 1 at the top of the script.

<Description of operation>

[0227] First, the overall operation of the embodiment will be described with reference to Fig. 1.

[0228] First, the image server 111 or print server 121 registers print original images. The image server 111 or this embodiment is called a contents server and stores images mainly supplied from a legal person running this server and usable by all users. The print server 121 of this embodiment is a print shop at which photographs are developed and which stores many personal images of each user available only by the user. However, in order to reduce a transmission load of print images, the print server 121 may register print images same as those registered by the image server 111.

[0229] The image server 111 or print server 121 assigns each print image registered by the server with an identifier (image ID). The image server 111 and print server 121 generate display/edit images of a low resolution which the client computer 101 browses and edits. The display image is a thumbnail image, and the edit image is, for example, of 1/4 base although it depends on a resolution. In generating such images, a print image of a high resolution is thinned and smoothed. An image at a low layer of the FlashPix (registered trademark) format may be used as the display/edit image.

[0230] The image server 111 or print server 121 transmits the display/edit images and image registration information to the center server 102, and the center server 102 stores the transmitted display/edit images and image registration information.

[0231] By using the client computer 101, a user acquires usable edit images and information on the print servers 111, 112 and 11N stored in the center server 102, and after a desired edit designation is made, selects one or more images and a desired print server 121 and places a print order to the center server 102.

[0232] The center server stores information of the taken-in print order and therewith, identifies a keeping location of a print image identified by each image ID contained in the print order by using the image registration information stored in the center server 102, and if necessary, transmits an image acquisition request to the image server 111, 112 or print server 121, 102 or 12N.

[0233] The image server or print server received the image acquisition request identifies the image file by using the image registration information of the server, and transmits the image file to the center server 102.

[0234] The center server 102 receives print images from the image server or print server and stores them in the center server 102.

[0235] When all the print images necessary for the print order are collected at the center server 102 or the selected print server 121, the center server 102 transmits the print original images and print order to the print server 121.

[0236] The print server 121 receives the print order and print original images from the center server 102, executes a print process in accordance with the print order, and thereafter transmits a print completion notice to the center server 102.

[0237] The center server 102 receives the print completion notice from the print server 121, and if necessary, deletes the print images collected for the print order and updates the image registration information.

<Image registration at print server>

[0238] A registration process of print original images to be executed by the print server 121 will be described. The location at which the print server 121 is usually a shop such as a DPE shop. This shop performs a registration of image data mainly supplied by a user.

[0239] The print image register 704 of the print server 121 registers image data of the user, and the local transmission/reception controller 703 transmits transmission data representative of the registration information to the center server 102. Registration of the transmission data by the transmission/reception controller is performed by storing a transmission file in the local transmission box 713.

[0240] In addition to new registration of original images, the print image register 704 deletes already registered original images, moves and copies original images to another print server 122 or image server 112.

[0241] In this embodiment, it is assumed that each user acquires in advance a user ID allowing to use this embodiment system.

[0242] Fig. 15 is a flow chart illustrating an image registration process to be executed by the print image register 704. A process of image registration, move, copy and delete to be executed by the print image register 704 will be described with reference to the flow chart of Fig. 15.

[0243] At Step S1500 a user enters a user ID already

acquired and confirmed from a membership card or the like by using KB 2008 to store the user ID in RAM 2002.

[0244] At Step S1501, a code (hereinafter, called an operation code) discriminating an operation item is entered from KB 2008 to store it in RAM 2002. The operation item includes "new registration", "move", "copy", "delete" and the like of image data.

[0245] At Step S1502 the operation code stored in Step S1501 is checked. If the operation code indicates "new registration", the flow advances to Step S1503, whereas if not, the flow advances to Step S1507.

[0246] At Step S1503, an original image stored in a removable disk is read into RAM 2002 by using FDD 2010, or a printed image is read with the scanner 2014 and stored in RAM 2002. At this time, a unique value is generated in the print server 121 by using a time or the like, which is used as the image ID shown in Figs. 9A and 9B and assigned to the image. The image ID is stored in RAM 2002.

[0247] At Step S1504, the original image stored in RAM 2002 at Step S1503 is converted into a display/edit image having a lower resolution and a reduced image size and file size, the display/edit image being stored in the local transmission box 713. The format of the display/edit image generated at Step S1504 is made so that it can be processed by the data processor 501 and expanded by S010 of the client computer 101. The image format used is a format which allows to write additional information such as a comment, for example, a JPEG (JPEG Interchange Format) which is one of the image data formats using JPEG compression algorithms. The image ID of the image generated at Step S1503 and stored in RAM 2002 is written as the additional information. The image data formats include JPEG, GIF, TIFF, EXIF, ZIP and the like, and the registration process is executed by using the format specified by the user.

[0248] At Step S1505, the original image read into RAM 2002 or FDD 2010. The keeping location is designated by a manager of the print server 121 by using KB 2008, the keeping location being stored in RAM 2002.

[0249] At Step S1506, the user ID, image ID and S1503 are stored in the original image position management table 715, an error message is displayed on CRT 2008 and Step S1512 is not executed.

[0250] Steps S1507 to S1511 are executed if the operation code stored in RAM 2002 at Step S1501 is not "new registration", i.e., if the operation code is either "move", "copy", or "delete".

[0251] At Step S1507 the image ID of an already registered original image to be processed is entered from

executed or not is displayed on CRT 2006 before Step S1508 and stored in RAM 2002. In this case, the original image position management table 715 is searched and only those image files having the owner ID 1202 and coincident with the user ID stored at Step S1505 are displayed on CRT 2006, and one of the image files is deleted from CRT 2006. If the user ID stored at Step S1505 is not executed. This process is performed for the case wherein when a print original image is moved or copied from another image server 111 or print server 121, the print original image is not transmitted with the center server 102 by using the transmission process and each process to be described later, but is stored in a storage medium such as a CD-R/W, which is transported in such case, since the display/edit image is already registered in the center server 102, Step S1504 is not necessary to be executed.

[0252] At Step S1508, the operation code stored at Step S1501 is checked. If the operation code is "move" or "copy", the flow advances to Step S1509, whereas if not, the flow advances to Step S1510.

[0253] At Step S1509, the original image position management table 715 is searched by using the image ID stored at Step S1507 to acquire the path name of the original image file corresponding to the image ID, to read the original image file from HDD 2010 or FDD 2010, and to copy it as a new image file in the local transmission box 713. The path name of the copied new image file is stored in RAM 2002.

[0254] At Step S1511, the operation code stored at Step S1501 is checked. If the operation code is "move" or "delete", the flow advances to Step S1511, whereas if not, the flow advances to Step S1512.

[0255] At Step S1511, the original image position management table 715 is searched by using the image ID stored at Step S1507 to store a flag representative of possibly deleted in the additional information 204. The reason why the data and original image file are not deleted at this time is that there is a possibility of placing a print order for this image. The data and original image file are actually deleted when the image registration data is transmitted from the center server 102.

[0256] At Step S1512, the image registration information transmission data, such as shown in Fig. 15 is generated and stored in RAM 2002, by using the user ID, image ID, path name of the image file stored in the local transmission box 713, respectively stored or generated at each of the above steps, and a server ID of the print server 121 stored in advance in HDD 2009.

[0257] At Step S1513, the number of original images to be processed for the user is checked, and if there is an original image still not processed, the flow returns to Step S1510.

[0258] At Step S1514 a transmission data file is generated by combining all image registration information transmission data stored in RAM 2002 at Step S1512, and stored in the local transmission box 713. Transmission control information ("TRANS" tag) such as shown in Fig. 13 is added to the top of the transmission data file.

<Image registration by image server>

[0259] Next, a process of registering a print original image to be executed by the image server 111 will be described. An original image to be stored in the image server 111 is a commercially available image usable by all users irrespective of whether it is free or not. Such an image is sold distributed in the form of a removable disk such as a CD-R/W.

[0260] The print image register 601 of the image server 111 registers image data, and the local transmission/reception controller 603 transmits the transmission data representative of the registration information to the center server 102. Registration of the transmission data by the transmission/reception controller is performed by storing the transmission data file in the local transmission box 613.

[0261] A process to be executed by the print image register 601 is similar to the print image register 704 of the print server 121 described with reference to Fig. 15. Therefore, only different points will be described with reference to the flow chart of Fig. 15 and the transmission data shown in Fig. 15.

[0262] The print image register 601 does not perform a different process for each user, and all users can use the print image register 601 when they acquire a display/

edit image by using the client computer 101. Therefore, Step S1505 is not executed.

[0263] Also for the image ID input at Step S1507, the owner ID 1202 of the original image position management table 612 is not compared with the user ID, and the display range is not made narrow.

[0264] Also for the image registration information transmission data generated at Step S1512, the parameter of "CUST" shown in Fig. 15 is not generalized.

[0265] A process other than those described above is similar to those which the print image register 704 of the print server 121 executes.

<Image registration at center server>

[0266] Next, the image registration process to be executed by the center server 102 will be described with reference to Fig. 4. The image registration process by the center server 102 registers image information in the center server 121 in accordance with the image registration/transmission data and display/edit image information transmission data shown in Figs. 13 and 16. The image server 111, in the following description, the "tag" or "parameter" in parentheses takes the value in the transmission data shown in Figs. 13 and 16.

[0267] The center transmission/reception controller 407 receives the image registration/transmission data file (e.g., Fig. 16) and display/edit image file transmitted from the image server 111 or print server 121, and stores them in the center reception box 419.

[0268] Next, the center transmission/reception controller 407 sequentially analyzes the transmission data file stored in the center reception box 419. If the image registration/transmission data (<REG> tag) is contained therein, the transmission data is extracted from the transmission data file and stored in HDD 1009 as a temporary file. Next, the image register 404 of the center server 102 is read from HDD 1005 or the file developed on RAM 1002 to make it available. The file name of the temporary file or the transmission data stored in HDD 1005 and the sender server ID described in the <TRANS> tag at the top of the transmission data file are therefore passed to the image register 404.

[0269] Fig. 17 is a flowchart illustrating the image registration process to be executed by the image register 404 of the center server 102. The image register 404 performs a process such as a process of reading the image registration/transmission data from the image server 111 or print server 121 and reflects the read information upon the original image position management table 412.

[0270] The image register 404 opens the transmission file having the temporary file name passed from the center transmission/reception controller 407 at the activation line, analyzes the contents and stores the analyzed results in RAM 1002. Thereafter, the process is continued in the flow chart of Fig. 17 is executed. The

print original image is not transmitted with the center server 102 by using the transmission process and each process to be described later, but is stored in a storage medium such as a CD-R/W, which is transported in such case, since the display/edit image is already registered in the center server 102, the new data is added to the original image position management table 412, the new data including the image ID (<ID> parameter) described in the image registration/transmission data and the sender server ID passed from the center transmission/reception controller 407 at the activation line. In this case, if the user ID ("CUST" parameter) is contained in the image registration/transmission data, this value is stored in the owner ID 1202 of the original image position management table 412 as additional information.

[0271] At Step S1703 the image file tag (<CAM-LINK>) in the image registration/transmission information transmission data is analyzed, and the display/edit image file designated by the tag is extracted from the center reception box 419 and moved to the display/edit image storage 411. In this case, if the user ID ("CUST" parameter) is contained in the image registration/transmission data, the display/edit image file is stored in a directory accessible to the document supplier 401 in the unit of each user. If the user ID is not described in the image registration/transmission data, it is stored in a directory which all the users can refer to.

[0272] Also at Step S1703, the path name of the display/edit image file stored by the above process and the image file of the image are added as new data to the edit image position management table 417.

[0273] If display image information and edit image information are designated as different image files in the image registration/transmission data, Step S1703 is executed for each of the image files. The display image and edit image are stored in different directions. At Step S1704, the operation code (<OP> parameter) of the image registration/transmission data is checked. If the operation code is either "move" or "copy" ("COPY"), the flow advances to Step S1705, whereas if not, the flow advances to Step S1708.

[0274] Steps S1705 to S1707 are executed if the operation code in RAM 1002 is either "move" or "copy". In this case, the original image position management table 412 is updated and the print original image is transferred to a "move" / "copy" receiver.

[0275] At Step S1705 the image ID and "move" or "copy" received ID are analyzed and extracted from the image registration/transmission data, and added to the original image position management table

der placed at Steps S1807 and S1809 is provided with necessary information to make it an actual order.

[0311] At Step S1809 the order taker 403 searches the server management table 413 to read the order ID table at Step S1801 is sequentially read and the keeping location of a print original image is searched to determine from which image server 111 or print server 121 the original image is transmitted. The details of this process will be later given with reference to the flow chart of Figs. 20x and 20B.

[0312] At Step S1903, the data processed at Step S1801 is checked again. If it is not necessary to collect an image, the order progress manager 406 is activated to transmit the order to the print server 121. The details of this process will be given later with reference to the flow chart of FIG. 21.

[0313] With the above process, an original image transmission request is transmitted to the image server 111 or print server 121 which stores the image ID contained in the print order, and the order status data in set [0314] At Step S1810 the order taker 403 executes a change process such as calculating a charge necessary for print output, and stores the received server ID, the number of copies and the like in the order management table 416 to complete the print order.

[0315] With the above process, the print order is supplied server ID to the order taker 403.

[0316] At Step S1810 the order taker 403 executes a change process such as calculating a charge necessary for print output, and stores the received server ID, the number of copies and the like in the order management table 416 to complete the print order.

[0317] With the above process, the print order is supplied server ID to the order taker 403.

[0318] If the data processor 501 and expander 503 are not used, the document supplier 401 of the center server 102 operates to directly display the display/img9 and its image ID on the network browser 502, and the user directly supplies the network browser 502 with print order data such as the image ID and the server ID of the output print server 12 by using KB 1008. The network browser 502 transmits the supplied print order data to the order taker 403 of the center server 102.

<Image collection server determining process>

[0319] After a print order is taken by the print order placing and taking process, the center server 102 selects a server having the smallest transmission cost among the servers which keep the print original image identified by the image ID contained in the print order, the transmission cost being required to transmit the print image to the output print server 121 via the center server 102.

[0320] This process is executed by the image collector 405. When the order placing and taking process is completed, the order taker 403 reads the image collector 405 from HDD 1009 or the like and develops it onto RAM 1002 to make it usable. At this time, the order ID of the print order taken by the order taker 403 during the order placing and taking process is passed to the image collector 405.

[0321] FIG. 19 is a flow chart illustrating the image collector server determining process to be executed by the image collector 405.

[0322] At Step S1901 by using the order ID passed from the order taker 403, the image collector 405 searches the order management table 406 to read the print order data, to store it in RAM 1002, and to add it to the order status table 415. On the data added to the order status table 415, each data having the value in the image ID is set with "before image collection" in the status 204. Of the data added to the order status table 415,

priority order and PRI stored at Step S310 are compared with each other. If the value of the image acquisition priority order is smaller, the server designated by the data is used as an image acquisition candidate to execute Step S317.

[0323] At Step S317 the image collector 405 stores the index value in RAM 1002 and sets the value of the image acquisition priority order of the data to PRI, to thereby use the server designated by the data as a search candidate as the image acquisition candidate.

[0324] At Step S318, the index value is incremented by +1 to prepare for the next data of the original image position management table stored in RAM 1002 to the earlier return to Step S311. If all sets of the original image position management table data have been processed, the flow advances to Step S320.

[0325] At Steps S320 to S322, the original image position management table data item is designated by the index (i) used as the image collection server, the index 16 of the original image position management table data (j) designated by the index (i) used as the image collection server, the index 20 of the original image position management table data (j) stored in RAM 1002 having as the keeping location 1203 the server ID (j) of the server having the smallest image acquisition priority order during the process from Step S311 to Step S319.

[0326] At Step S320 it is checked whether the keeping location (i) has the path name format. If it has the path name format, the flow advances to Step S321, whereas if not, the flow advances to Step S322.

[0327] At Step S321, since the print original image designated by the original image position management table (i) already exists in the temporary image storage area 412 of the center server 102, the status 204 of the order status data stored in RAM 1002 is set with "image collected" to thereafter return to Step S301.

[0328] At Step S322, by using the image ID and keeping location (i) stored in RAM 1002, a transmission data file is generated and stored in the center transmission box 418. The transmission data file is constituted of the original image transmission request transmission data such as that shown by the <TP-RECD> tag in FIG. 13 and the common data at the top such as that shown by the <TP-ANS> tag in FIG. 13. Thereafter the flow returns to Step S301.

[0329] Step S314 is executed if it is judged at Step S313 that the value of the keeping location (i) of the original image position management table data has the path name format. If it is not, the flow advances to Step S304, wherein the flow advances to Step S304, whereat if not, the flow returns to Step S301.

[0330] At Step S304 the order status table 415 is searched to check whether the data having the value of the image ID 203 in the order status table stored at Step S301. If the value is stored, the flow advances to Step S305, whereas if not, the flow returns to Step S301.

[0331] At Step S305 the check results at Step S304 are judged. If the data matching the search conditions at Step S304 exists in the order status table 415, the flow advances to Step S306, whereas if not, the flow advances to Step S307.

[0332] At Step S306, since the image ID is in a state of "image being collected" for another print order, the status 204 in the order status data stored at Step S301 is set with "image being collected" to thereafter return to Step S301.

[0333] At Step S307, by using the image ID in the order status data stored at Step S301, the image collector 405 searches the original image position management table 412 to extract one or more sets of data having the image ID and store them in RAM 1002.

[0334] Next, at Step S316 the image acquisition pri-

[0322] At Step S308, the image collector 405 checks the search results at Step S307. If there is one or more sets of the corresponding data in the original image position management table 412, the flow advances to Step S310, whereas if not, the flow advances to Step S305.

[0323] At Step S309, since there is no original image corresponding to the image ID, the status 201 of the order status data stored at Step S301 is set with "error" and this data is written in the order status table 415 to thereafter return to Step S301.

[0324] At Step S310, a preparation for the following Steps is made for each of one or more sets of the data in the original image position management table stored in RAM 1002 to the earlier return to Step S311. If all sets of the original image position management table data have been processed, the flow advances to Step S320.

[0325] At Steps S320 to S322, the original image position management table data item is designated by the index (i) used as the image collection server, the index 16 of the original image position management table data (j) designated by the index (i) used as the image collection server, the index 20 of the original image position management table data (j) stored in RAM 1002 having as the keeping location 1203 the server ID (j) of the server having the smallest image acquisition priority order during the process from Step S311 to Step S319.

[0326] At Step S320 it is checked whether the keeping location (i) has the path name format. If it has the path name format, the flow advances to Step S321, whereas if not, the flow advances to Step S322.

[0327] At Step S321, since the print original image designated by the original image position management table (i) already exists in the temporary image storage area 412 of the center server 102, the status 204 of the order status data stored in RAM 1002 is set with "image collected" to thereafter return to Step S301.

[0328] At Step S322, by using the image ID and keeping location (i) stored in RAM 1002, a transmission data file is generated and stored in the center transmission box 418. The transmission data file is constituted of the original image transmission request transmission data such as that shown by the <TP-RECD> tag in FIG. 13 and the common data at the top such as that shown by the <TP-ANS> tag in FIG. 13. Thereafter the flow returns to Step S301.

[0329] Step S314 is executed if it is judged at Step S313 that the value of the keeping location (i) of the original image position management table data has the path name format. If it is not, the flow advances to Step S304, wherein the flow advances to Step S304, whereat if not, the flow returns to Step S301.

[0330] At Step S305 the check results at Step S304 are judged. If the data matching the search conditions at Step S304 exists in the order status table 415, the flow advances to Step S306, whereas if not, the flow advances to Step S307.

[0331] At Step S306, since the image ID is in a state of "image being collected" for another print order, the status 204 in the order status data stored at Step S301 is set with "image being collected" to thereafter return to Step S301.

[0332] At Step S307, by using the image ID in the order status data stored at Step S301, the image collector 405 searches the original image position management table 412 to extract one or more sets of data having the image ID and store them in RAM 1002.

[0333] Next, at Step S316 the image acquisition pri-

[0322] FIG. 21 is a flow chart illustrating the order status table updating process to be executed at Step S303 for determining the image collection server.

[0323] At Step S303, the sub-order (i) of a unit of the sub-order of the order status data stored in RAM 1002 in the following description, the sub-order (i) of a sub-order to be processed is represented by "sub-order ID (k)".

[0324] At Step S310 the image collector 405 checks the status of the data having the same sub-order ID as the sub-order ID (k), among the order status data. If the status is all "image collected", the flow advances to Step

S2102, whereas if not, the flow advances to Step S2103.

[0340] At Step S2102 the image collector 405 sets "image collected" to the status 204 of this data having the same sub-order ID as the sub-order ID (N) and no value of the image ID among the order status data.

[0341] At Step S2103 the image collector 405 increments the index k by "1" to process the next sub-order ID. If all the sub-order IDs have been processed, the flow advances to Step S2104, whereas if there is the no value in the image ID 203, among the order status data, to check whether the status 204 of all sets of the data has "image collected". If the status is all "image collected", the flow advances to Step S2105, whereas if not, the flow advances to Step S2106.

[0342] At Step S2104 the image collector 405 checks all sets of the data having a value in the sub-order ID 202 and no value in the image ID 203, among the order status data, to check whether the status 204 of all sets of the data has "image collected". If the status is all "image collected", the flow advances to Step S2105, whereas if not, the flow advances to Step S2106.

[0343] At Step S2105 the image collector 405 sets "image collected" to the status 204 of the data having no value in the sub-order ID 202 and image ID 203, among the order status data.

[0344] At Step S2106 the order status data stored in RAM 1002 is written in the order status data table 415.

[0345] At Step S2107 the image collector 405 checks the data having no value of the sub-order ID 202 and image ID 203 among the order status data. If the status 204 of the data is set with "image collected", the flow advances to Step S2108, whereas if the data having the status 204 is set with a value different from "image collected", the process is terminated.

[0346] At Step S2108 the image collector 405 reads the order progress manager 406 from HDD 1009 or the like and develops it onto RAM 1002 to make it usable and pass the order ID of the order status data to the order progress manager 406.

<Original image transmission process>

[0347] The image server 111 or print server 121 selected as the original image collection server by the image collection server determining process and received the original image transmission request transmission data transmits the print original image identified by the image ID designated by the original image transmission request transmission data to the center server 102. This process is executed by the print image transmitter 602 of the image server 111 or by the print image transmitter 705 of the print server 121. The functions of the print image transmitters 602 and 705 are the same. In the following, therefore, only the process to be executed by the print image transmitter 602 of the image server 111 will be described.

[0348] Fig. 22 is a flow chart illustrating a process to be executed by the print image transmitter 602. When the local transmission/reception controller 603 receives an image transmission request transmission data (i.e., the local transmission/reception controller 603 reads the

print image transmitter 602 from HDD 1009 or the like and develops it onto RAM 1002 to make it usable and pass the order ID of the order progress manager 406 via RAM 1002 to the print order to the order progress manager 406 via RAM 1002.

[0349] Upon reception of the order ID at the activation controller 407 at the activation time, the image collector 405 writes the contents of the file in RAM 1002 and analyzes the contents to store the image ID and the file name of the original image file contained in the data file into RAM 1002.

[0350] At Step S2501 the order progress manager 406 searches the order management table 415 by using the order ID received at the activation time to read the print order data stored in RAM 1002 and lower level data 502, 603 and 604 designated by the order ID and store them in RAM 1002.

[0351] At Step S2502 the order progress manager 406 searches the order status table 415 by using the order ID received at the activation time to read all sets of the order status data having the same order ID 201 as the order ID and store them in RAM 1002.

[0352] Steps S2503 to S2505 are repeated for each set of the order status data having a value in the image ID 203, among the order status data stored at Step S2501, among the order status data stored at Step S2502. In the following description of Steps S2503 to S2505, the data value of the order status data to be processed is represented by "image ID (i)".

[0353] At Step S2503 the order progress manager 406 searches the original image position management table 412 by using the image ID (i) to read one set of the original image position management table data having the same image ID 1201 as the image ID (i) and store it in RAM 1002.

[0354] At Step S2504 the image collector 405 searches the order status table 415 to extract all sets of the data having the same image ID 203 as the image ID stored at Step S2401, and stores the extracted data in RAM 1002. Next, the status 204 of the extracted data is set with "image collected" and the order status data table 415 is updated.

[0355] At Step S2404 the image collector 405 searches the order status table 415 to extract all sets of the data having the same image ID 203 as the image ID stored at Step S2401, and stores the extracted data in RAM 1002. In the following description, the data to be processed is represented by the order status data (i) where (i) is the index.

[0356] At Step S2405 the index (i) is initialized to "1" in order to sequentially process the order status data.

[0357] At Step S2406 the image collector 405 checks whether the status 204 of all sets of the order status data (i) is set with "image collected". If the status is all set with "image collected", the order progress manager 406 is activated to transmit an order to the print server 121. The details of Step S2406 are the same as the order status table updating process while the image collector 405 executes the original image collection server determining process described with reference to Fig. 21.

[0358] At Step S2407 the index (i) is incremented by "1" to prepare for the process of the next order status data.

[0359] At Step S2408 the image collector 405 checks whether the order status data (i) is in RAM 1002. If exists, the flow returns to Step S2406, whereas if not, the process is terminated.

<Print order transmitting process>

[0360] When the print original image necessary for the print order process by the image collecting process or image receiving process executed by the image collector 405 of the center server 102 are all prepared, the image collector 405 reads the order progress manager 406 generalizes order transmission data such as shown in Fig. 13 by using the print order data stored at Step S2501 and a plurality of image files and file names

flow chart of Fig. 24.

[0361] At Step S2401, by using the original image data passed from the center transmission/reception controller 407 at the activation time, the image collector 405 generates and transmits data by using the order ID, stores it in the center transmission box 418, and transmits it to the print server 121.

[0362] Fig. 25 is a flow chart illustrating the print order transmitting process to be executed by the order progress manager 406.

[0363] At Step S2501 the order progress manager 406 searches the order management table 415 by using the order ID received at the activation time to read the print order data stored at Step S2401 and lower level data 502, 603 and 604 designated by the order ID and store them in RAM 1002.

[0364] At Step S2502 the order progress manager 406 searches the order status table 415 by using the order ID received at the activation time to read all sets of the order status data having the same order ID 201 as the order ID and store them in RAM 1002.

[0365] At Step S2503 to S2505 are repeated for each set of the order status data having a value in the image ID 203, among the order status data stored at Step S2502. In the following description of Steps S2503 to S2505, the data value of the order status data to be processed is represented by "image ID (i)".

[0366] At Step S2503 the order progress manager 406 searches the original image position management table 412 by using the image ID (i) to read one set of the original image position management table data having the same image ID 1201 as the image ID (i) and store it in RAM 1002.

[0367] At Step S2504 the image collector 405 checks whether the keeping location 1203 of the original image position management table data stored at Step S2503 is checked whether the keeping location is the path name of the temporary image storage 414 or whether the keeping location is coincident with the server ID of the output print server in the print order data stored at Step S2501. If this condition is satisfied, the flow advances to Step S2505, whereas if not, the flow returns to Step S2503, whereas one set of the next original image position management table data having the same image ID 1201 as the image ID (i) is read from the original image position management table 412.

[0368] At Step S2505 the image collector 405 checks whether the order status 204 of the local transmission/reception controller 603 or 703, and reached by the center transmission/reception controller 407 of the center server 102. This communication may be performed either through dial-up or on-line using a dedicated cable.

[0369] Upon reception of the original image transmission data, the center transmission/reception controller 407 stores the data in the center reception box 419 as an original image transmission data file, thereafter reads the image collector 405 from HDD 1009 or the like and develops it onto RAM 1002 to make it usable and pass the file name of the original image transmission data file in the center reception box 419 to the image collector 405. The image collector 405 analyzes the original image transmission data file to keep the activated image file and update the order status table.

[0370] Fig. 24 is a flow chart illustrating the above-described process to be executed by the image collector 405. This process will be described with reference to the

transmission control information table 3109 and reception control information table 3104 are collectively called a transmission/reception control information table. [0435] The transmission/reception control information table stores a plurality of data records each being the data group described with reference to Fig. 32. Each data record is definitely identified by the value of a transmission file name 3201.

[0436] The transmission file name 3201 is the file name of the transmission data file 3004, reception data file 3105, image file 3005 or image file 3108.

[0437] Reference numeral 3202 represents a transmission data file name which stores the file name of the transmission data file 3004 or reception data file 3105 containing the <CANLINK> tag indicating the image file, if the transmission file name 3201 designates the image file 3005 or 3105. If the transmission file name 3201 designates the transmission data file 3004 or reception data file 3105, the transmission data file name has no value.

[0438] Reference numeral 3203 represents a file size which stores the size of a file designated by the transmission file name as the number of bytes.

[0439] Reference numeral 3204 represents a box storage destination which stores the identifier when the file is designated by the transmission file name 3201.

[0440] Reference numeral 3205 represents a transmission/reception data table which stores the data file name when the file is designated by the transmission file name 3201 is transmitted or received. [0441] The transmission/reception control information table stores attributes of each of the transmission data file 3004, reception data file 3105, image file 3005 and image file 3108, as described above.

<Processor information table>

[0442] Fig. 33 is a diagram showing data items stored in the processor information table 3103 of the reception box 3101.

[0443] The processor information table 3103 stores a plurality of data records each being the data group described with reference to Fig. 33. Each data record is definitely identified by the value of a transmission data file name 3103, in this embodiment, it is assumed that data records having correct values are stored in advance in the processor information table 3103.

[0444] The transmission data file name 3301 stores a tag name for identifying transmission data having the transmission data format described with reference to Fig. 13.

[0445] Reference numeral 3302 represents a processor starting method which stores a method of starting a processor which processes the transmission data designated by the transmission data tag name 3301. The starting method stores a program file name of an appli-

cation program if this application program is used for developing it onto RAM 1002. The center transmission/reception controller 407, local transmission/reception controller 603 or local transmission/reception controller 703 reads the application program from HDD 1009 or HDD 2009 and develops it onto RAM 1002 to make it usable.

[0446] Reference numeral 3303 represents a delivery data information which stores the name of a data item passed to the processor via RAM 1002 or RAM 2002 after the processor is activated in accordance with the processor starting method 3302 by the center transmission/reception controller 407, local transmission/reception controller 603, or local transmission/reception controller 703. The name of the data item is, for example, the file name of the transmission data file 3105.

<Transmission file registration process>

[0447] Fig. 34 is a flow chart illustrating the transmission file registration process to be executed by the center server 102 or print server 121. The transmission file registration process registers the transmission data file or the like in the transmission box 3001, 3004 and is executed by each processor of the print server 121 transfers data to and from the network. 103 by using the protocol. It is assumed that a connection method from the print server 121 to the center server 102 is set in advance to the print server 121.

[0448] Figs. 35A and 35B are flow charts illustrating the data transmission/reception process to be executed by the local transmission/reception process to be executed by the local transmission/reception controller 703 of the print server 121 or the image server 111 or the local transmission/reception controller 703 of the print server 121. Since the processor executing this process, it is assumed that the transmission data is already generated, that the transmission data can be stored as the transmission data file 102, image server 111 or print server 121, and that the file 102, image server 111 or print server 121 will be described in the following. The corresponding process to be executed by the center transmission/reception controller 407 of the center server 102 will be later described with reference to Fig. 26.

[0449] A "message" to be used in this description of Figs. 35 and in the description to follow is assumed to be text data containing the server ID of the print server 121, a file name 3201 and the local transmission/reception controller 703 of the print server 121. A file is transmitted and received by HTTP or the like. A file is transmitted and received by FTP.

[0450] In response to an operation by the operator from KS 2008 or at a preset time interval, the local transmission/reception controller 703 of the print server 121 is read from HDD 2009 and developed onto RAM 2002. [0451] Steps S3505 to S3507 are repeated for each data of the transmission control information data having the same transmission data file name 3202 as the transmission control information data file name 3201, among the transmission control information data stored at Step S3502, among the transmission control information data in the transmission control information table 3003.

[0452] At Step S3503 the local transmission/recep-

tion box 3002 having the same name as the server ID of the receiver stored in RAM 1002 or RAM 2002. The center server 102, which message requests the directory names of the transmitter-sorted reception control information table 3102 and receiver-sorted transmission box 3102 and receiver-sorted transmission box 3005 stored at Step S3404, the file name of the transmission data file 3004 stored at Step S3401, the file size of the image file, and a present process time, and writes the gathered transmission/reception control information table 3003.

<Data transmission/reception process at print server>

[0453] The center server 102 and print server 121 can be interconnected via the network 103 by dial-up connection or permanent connection on the side of the printer server 121. The network 103 may use a defined network configuration. In this embodiment, the widely used Internet is used. The protocol of the network 103 may use a defined protocol. This embodiment uses HTTP (Hyper Text Transfer Protocol), FTP (File Transfer Protocol) or the like which is commonly used by the internet.

The local transmission/reception controller 703 and center transmission/reception controller 407 of the print server 121 transfers data to and from the network 103 by using the protocol. It is assumed that a connection method from the print server 121 to the center server 102 is set in advance to the print server 121.

[0454] Figs. 35A and 35B are flow charts illustrating the data transmission/reception process to be executed by the local transmission/reception process to be executed by the local transmission/reception controller 703 of the print server 121 or the image server 111 and the local transmission/reception controller 703 of the print server 121 are overwritten by the transmission control information data upon the data having the same transmission file name 3201 in the directory of the transmitter-sorted reception box 3102 of the center server 102 stored at Step S3501.

[0455] At Step S3505 the local transmission/reception controller 703 reads one set of the transmission control information data satisfying the above conditions from the transmission control information table 3003, and stores it in RAM 2002. Next, the local transmission/reception controller 703 reads the image file 3005 designated by the transmission control information data stored at Step S3502, among the transmission control information data in the transmission control information table 3003.

[0456] At Step S3505 the local transmission/reception controller 703 reads one set of the transmission control information data satisfying the above conditions from the transmission control information table 3003, and stores it in RAM 2002. Next, the local transmission/reception controller 703 in accordance with the connection method to the center server 102 passes to the print server 121, the local transmission/reception controller 703 requests a connection to the center server 102 through dial-up or the like to thereby establish a connection.

sorted reception box 3102 of the center server 102 sorted at Step S3501.

[0455] At Step S3506 the local transmission/reception controller 703 transmits a message which notifies a file transmission compilation and contains the transmission control information data stored at Step S3505.

[0456] At Step S3507 the local transmission/reception controller 703 sets a preset deadline to the transmission compilation deadline 3205 of the transmission control information data stored at Step S3505, and overwrites the data having the same transmission file name 3201 in the transmission control information table 3003 as the transmission file name of the transmission control information data, upon and stored at Step S3502.

[0457] At Step S3508 the local transmission/reception controller 703 transmits a message which notifies a file transmission compilation and contains the transmission control information data stored at Step S3505.

[0458] At Step S3509 the local transmission/reception controller 703 receives a file transmission control information table 3003 in the transmitter-sorted reception box 3102 for the center server.

[0459] At Step S3514 the local transmission/reception controller 703 transmits a message which notifies a file reception compilation and contains the transmission control information data stored at Step S3513.

[0460] At Step S3515 the local transmission/reception controller 703 receives a file transmission control information table 3003 in the transmitter-sorted reception box 3102 for the center server.

[0461] At Step S3517 the local transmission/reception controller 703 sets a preset deadline to the transmission compilation deadline 3205 of the transmission control information data stored at Step S3513, and adds the transmission control information data to the reception/transmission control information table 3104 of the transmitter-sorted reception box 3102 for the center server.

[0462] At Step S3518 the local transmission/reception controller 703 transmits a message which notifies a file reception compilation and contains the transmission control information data presently processed and stored at Step S3510.

[0463] At Step S3517 the local transmission/reception controller 703 reads the transmission data file 3105 received and stored at Step S3511 and writes it in RAM 2002 to analyze the content thereof and extract all the transmission data tags such as tags represented by the <ORIEFS> tag shown in Fig. 13. Next, by using each value of the transmission data tags, the processor information table 3103 is searched to extract the processor information data having the same transmission data tag name 3201 in the processor information table 3103 as the value of the extracted transmission data tag, and thereafter, the corresponding processor is activated in accordance with the processor starting method 3202 and delivery data information 3303 in the processor information data.

[0464] At Step S3518 the local transmission/reception controller 703 reads the transmission data file 3105 from the center server 102, and stores it in RAM 2002.

[0465] At Step S3510 the local transmission/reception controller 703 reads one set of the transmission control information data satisfying the above conditions from the transmission control information table received from the center server 102, and stores it in RAM 2002.

[0466] At Step S3511 the local transmission/reception controller 703 reads the transmission data file 3105 for the center server 102 if the dial-up connection to the center server 102 is used.

[0467] At Step S3512 the local transmission/reception controller 703 sets a preset deadline to the transmission compilation deadline 3205 of the transmission control information data stored at Step S3510, and adds the transmission control information data to the transmission data file so as to be stored as the transmission data file 3105 in the transmitter-sorted reception box 3102 for the center server 102.

[0468] At Step S3513 the local transmission/reception controller 703 releases the connection to the center server 102 if the dial-up connection to the center server 102 is used.

[0469] At Step S3514 the local transmission/reception controller 703 searches the transmission control information table 3003 in the receiver-sorted transmission box 3002 for the center server 102 to oblige the trans-

mission control information data having the transmission compilation deadline 3205 older by a predetermined period from the present time, from the transmission control information table 3003, and also to delete the transmission data file 3204 or image file 3205 designated by the transmission file name of the transmission control information data, The transmission control information data and batch transmission file are not deleted immediately after the transmission compilation because it may become necessary to transmit them again when a transmission trouble occurs.

[0470] The processor such as the order output manager 701 activated at Step S3517 deletes a corresponding transmission data file 3105 and image file 3106 at the lower level from the reception box 3101 when the process for the transmission data file is completed, and also deletes the data having the same transmission file name 3201 in the reception control information table 3104 as the file version of the deleted file.

[0471] In this embodiment, when the process is interrupted during the data reception by a network trouble, this process is again executed from the start. Also in this case, an already transmitted or received image file is not transmitted or received again.

<Transmission/reception process at center server>

[0472] Fig. 36 is a flow chart illustrating the data transmission/reception process to be executed by the center transmission/reception controller 407 of the center server 102.

[0473] Steps S3513 to S3517 are repeated for each of the data having the same transmission file name 3201 in the transmission control information table 3003 as the transmission file name of the transmission control information data, upon and stored at Step S3502.

[0474] At Step S3518 the local transmission/reception controller 703 sets a preset deadline to the transmission compilation deadline 3205 of the transmission control information data stored at Step S3513, and adds the transmission control information data to the reception/transmission control information table 3104 of the transmitter-sorted reception box 3102 for the center server.

[0475] At Step S3519 the local transmission/reception controller 703 transmits a message which notifies a file reception compilation and contains the transmission control information data stored at Step S3510.

[0476] At Step S3520 the local transmission/reception controller 703 receives a file transmission control information table 3003 in the transmitter-sorted reception box 3102 for the center server.

[0477] At Step S3521 the local transmission/reception controller 703 reads the transmission data file 3105 of the transmission compilation deadline 3205 of the transmission control information data stored at Step S3513, and adds the transmission control information data to the reception/transmission control information table 3104 of the transmitter-sorted reception box 3102 for the center server.

[0478] At Step S3522 the local transmission/reception controller 703 transmits a message which notifies a file reception compilation and contains the transmission control information data presently processed and stored at Step S3510.

[0479] At Step S3523 the local transmission/reception controller 703 reads the transmission data file 3105 received and stored at Step S3511 and writes it in RAM 2002 to analyze the content thereof and extract all the transmission data tags such as tags represented by the <ORIEFS> tag shown in Fig. 13. Next, by using each value of the transmission data tags, the processor information table 3103 is searched to extract the processor information data having the same transmission data tag name 3201 in the processor information table 3103 as the value of the extracted transmission data tag, and thereafter, the corresponding processor is activated in accordance with the processor starting method 3202 and delivery data information 3303 in the processor information data.

[0480] At Step S3524 the local transmission/reception controller 703 releases the connection to the center server 102 if the dial-up connection to the center server 102 is used.

[0481] At Step S3525 the local transmission/reception controller 703 checks whether the contents of the message checked at Step S3501 correspond to the contents of the message notified a file reception com-

plation, the flow advances to Step S3810, whereas if no, the process is terminated.

[0451] At Step S3601 by using the transmission file name S3201 in the transmission control information data contained in the message analyzed at Step S3801, the reception control information table is searched to write a present date/time in the transmission compilation date/time data.

[0454] At Step S3611, the transmission control information table S3003 of the message transmitter connection box S3002 for the server ID of a message transmitter contained in the message analyzed at Step S3601 is searched to delete the transmission control information data having a transmission completion date/time S2051 older by a predetermined period from the present time, from the transmission control information table S3003, and also to delete the transmission data file 3004 or image file 3005 designated by the transmission file name S201 of the transmission control information data. The transmission control information data and each transmission/transmission/reception controller 703 becomes available after its transmission completion because it may become necessary to transmit them again when a transmission trouble occurs.

[0455] The center transmission/reception controller 407 may be made always resident on RAM 1002 so that direct data transmission/reception relative to the local transmission/transmission/reception controller 603 or local transmission/transmission/reception controller 703 becomes available without intervening the document supplier 401. In this case, data transmission is monitored and when data is received, the process of the flow chart shown in Fig. 38 is executed and thereafter data transmission is monitored. Such a process is repeated.

[Second Embodiment]

[0456] Fig. 37 is a block diagram showing the system structure according to the second embodiment of the invention. This embodiment is constituted of a plurality of systems of the first embodiment which are interconnected by networks. Even a print order placed by a print server contains the image ID of an image at a print server or image server under management of another center server, it is possible to collect print original images as designated by the image ID and print a document of the print order.

[0457] In Fig. 37, reference numerals 3701 and 3702 represent a center server which is similar to the center server 102 of the first embodiment. The center server 3701 is called a center server A, and the center server 3702 is called a center server B.

[0458] Reference numeral 3703 represents a client computer similar to the client computer 101 of the first embodiment.

[0459] Reference numerals 3711, 3712, 371N, 3731, 3732 and 373N represent an image server similar to the image server 111 of the first embodiment.

[0460] Reference numerals 3721, 3722, 372N, 3741, 3742 and 374N represent a print server similar to the print server 121 of the first embodiment.

[0461] The server ID of the image servers 3711, 3712, 371N and print servers 3721, 3722 and 372N are stored in the server management table 413 of the center server A 3701.

[0462] The server ID of the image servers 3711,

3722, 373N and print servers 3741, 3742 and 374N are stored in the server management table 413 of the center server B 3702.

[0463] Reference numerals 3751, 3752 and 3753 represent a network similar to the network 103 of the first embodiment. In Fig. 37, although the networks 3751, 3752 and 3753 are shown physically discrete, they may be a physically single network.

[0464] The embodiment may be reduced in principle even if our more center servers are connected to the network.

[0465] In this embodiment, it is assumed that each center manager has information of the names and connection methods of the other center servers. It is therefore possible for a client computer 3703 to acquire addresses from the center server A 3701 and place a print order of a document generated by using the edit images to the center server B 3702 which prints the document of the print order.

[0466] First, the client computer 3703 is connected to the center server A 3701. Edit images are acquired and a print document is created by executing the order placing process at Steps S1601 to S1606 shown in Fig. 18 of the first embodiment.

[0467] Next, the client computer 3703 is connected to the center server B 3702 by executing the order placing process at Step S1707 and following steps. The center server B 3702 takes the print order by executing the order taking process described with reference to Fig. 19 of the first embodiment.

[0468] Next, the center server B 3702 executes the print image collecting process described with reference to Fig. 20 of the first embodiment. In this case, if the center server number 91 of the print job contained in the print order is not the same as the name of the center server B 3702, the image acquisition request transmission data as indicated at 1314 shown in Fig. 13 is transmitted to the center server 3703 designated by the center server number 911, for example, the center server A 3701. This transmission process is executed by using the center transmission/reception controller 407.

[0469] The center transmission/reception controller 407 of the center server A 3701 received the image acquisition request transmission data activates the order taking 403 to pass the image acquisition request transmission data to the image collector 405. By using the image acquisition request transmission data, the image collector generates a new print order having as the ac-

ditional information the name of the center server of the transmitter, the name of the image acquisition request transmission data, stores it in the order status table 415 and order management table 416, and thereafter activates the image collector 405.

[0470] The image collector 405 of the center server A 3701 executes the print image collecting process described with reference to Fig. 20 of the first embodiment, and after all the print images are collected, activates the order progress manager 406.

[0471] If the name of the center server of the transmitter of the image acquisition request transmission data is contained as the additional information in the print order to be processed, the order progress manager generates its original image transmission data as indicated at 1317 in Fig. 13 by using the print original images for the print order, and transmits the original image transmission data and print original images to the transmitter center server designated by the print order data. By using the center transmission/reception controller 407, the center server B 3702 receives the original image transmission data executes the processes from the image reception process to the print completion process described with reference to Fig. 24 to 28 of the first embodiment, the print completion process described with reference to Fig. 20 of the first embodiment is executed.

[0472] The center server B 3702 received the original image transmission data acquires the processes from the image reception process to the print completion process described with reference to Figs. 24 to 28 of the first embodiment, the print completion process described with reference to Fig. 20 of the first embodiment is executed.

[0473] According to the second embodiment of the invention, a storage and data transmission/reception controller 3704 is an application program which receives a return order data such as image files. The data transmission/reception control

as image files. The data transmission/reception control 3704 manages a transmission/reception data as a combination of the transmission/reception control information data of an SGM format and the transmission/reception control data such as image files. The data transmission/reception control 3704 and receives data asynchronously in a manner that the network connecting side such as an output apparatus positively processes data, in response to a transmission request from each transmission/recep-

tion controller are provided. Accordingly, even in an environment such as a dial-up connection not always connected to the network, a large amount of data such as print data can be transmitted and received at the same time.

[0474] A manager for storing data transmission/reception history in the storage and the data transmission/reception controller having a function of transmitting/receiving only the data still not transmitted/received when the transmission/reception resumes after the transmission/reception failure by using the data transmission/reception history are provided. Accordingly, even in an unreliable network environment such as mobile communications, the dial-up connection can be used reliably.

<Print server>

[0475] Fig. 39 is a diagram showing the system structure obtained by adding processing components necessary for the third embodiment to the print server 121 described with reference to Fig. 7. In Fig. 39, components 3801 and 3802 are application programs which are read from ROM 1003, HDD 1009 or FDD 1010 and developed onto RAM 1002 to make them usable, similar to each processing component shown in Fig. 7.

[0476] An order list display 3802 is an application program which receives a correction request, a cancellation request or like transmitted from the client computer 101 from an order management table 3811 and order status table 3810 and transmits the document print order data to the client computer 101 via a document supplier 3801.

[0477] An order status corrector 3804 is an application program which analyzes a return order data file 4501 acquired from the print server 121 to be described later and updates the order status table 3810.

[0478] Fig. 39 is a diagram showing the system structure obtained by adding processing components necessary for the third embodiment to the print server 121 described with reference to Fig. 7. In Fig. 39, components 701, 702, 704, 705, 712, 715, and 716 shown in Fig. 7 are not shown because these components have no important meanings in terms of the embodiment description. The components 3803, 3811, 3812, and 3913 shown in Fig. 39 are similar to the components 703, 711, 712 and 713 shown in Fig. 7. The added processing components 3801 and 3802 are application programs which are read from ROM 1003, HDD 1009 or FDD 1010 and developed onto RAM 1002 to make them usable, similar to each processing component shown in Fig. 7.

[0479] A reception order list display 3801 is an application program which acquires a list of print order data

stored in an order management table 3911 in response to a request entered from an input means such as KB 1008, and displays the list on CRT 1008 of the print server 1021. A return order transmitter 3902 is an application program which executes a process of returning selected print order data to the center server 102 in response to a request entered from the input means such as KB 1008.

[0523] The phrase "return an order" used in the description of the embodiment means to return print order data received for printing at the print server 121 from the center server 102 to the center server 102 to make it available.

<list display process>

[0524] Fig. 40 is a flow chart illustrating the process content to be executed by the order list display 3802. A process of displaying a list of orders placed by a user will be described with reference to Fig. 40.

[0525] A user of the client computer 101 communicates with the document supplier 3801 of the center server 102 by using the network browser 502. The order list display 3802 is read from HDD 1009 or the like and developed onto RAM 1002 to make it usable. After the user information passed from the client computer 101 is checked, the print order presently placed and stored in the order management table 3911 in HDD 1009 are displayed on CRT 2008 by using the network browser 502 of the client computer 101. As the transmission protocol used between the client computer 101 and center server 102 and the data exchange means used by the client computer 101, those similar to those used during the order placing process described with reference to Fig. 18 are used.

[0526] Steps S4001 and S4002 are the same as the order placing process at Steps S1001 and S1002 described with reference to Fig. 18. Also in this case, if authentication of the user is failed, the flow does not advance to the next Step.

[0527] At Step S4003 the contents of print orders presently placed by the user authenticated at Step S4002 are displayed on the client computer 101. First, the print order data, having the same value as the user ID is searched from the order management table 3911. The searched print order data is stored in RAM 1002.

[0528] In the following description, the data to be processed is represented by using an index i. The print order processing is represented by "print order data (i)" and the order status data is represented by "order status table (i)". The order ID in the print order data is represented by order ID (i).

[0529] At Step S4004 the index i is initialized to 1 in order to sequentially process the print order data.

[0530] At Step S4005 the order ID (i) stored in RAM 1002 is searched from the order status table 3910. The searched data is stored in

RAM 1002.

[0531] At Step S4006 the print order data (i) and order status data (i) stored in RAM 1002 are transmitted to the document supplier 3801. The client computer 101 displays them in a user order confirmation window to be described later of CRT 2008, by using the network browser 502.

[0532] At Step S4007 the index is incremented by 1* to prepare for the next print order data.

[0533] At Step S4008 i is checked whether the order ID (i) exists in RAM 1002. If exists, the flow returns to Step S4005, whereas if not, the process is terminated.

<User order confirmation window>

[0534] Fig. 41 shows an example of the user order confirmation window used by the embodiment. A user order confirmation window 4101 is used for displaying a list of print order data presently placed by the user. The user order confirmation window 4101 is divided into an order contents display area 4102 and an order confirmation change activation area 4103.

[0535] During the above-described user order list display process, data is transmitted from the client computer 101 by using the network browser 502 of the client computer 101 to the network browser 502 of the client computer 101 by using the transmission protocol such as Hyper Text Transfer Protocol (HTTP). The transmitted data is displayed on CRT 60 so as to make the user confirm it.

[0536] In the order contents display area 4102, information 4104 to 4112 of one print order can be displayed. Information 4104 to 4112 is data supplied from the client computer 101 and stored in RAM 1002. The information 4104 to 4112 is read from HDD 1009 or the like and developed onto RAM 1002 to make it usable. After the user information passed from the client computer 101 is checked, the print order presently placed and stored in the order management table 3911 in HDD 1009 are displayed on CRT 2008 by using the network browser 502 of the client computer 101. As the transmission protocol used between the client computer 101 and center server 102 and the data exchange means used by the client computer 101, those similar to those used during the order placing process described with reference to Fig. 18 are used.

[0537] Steps S4001 and S4002 are the same as the order placing process at Steps S1001 and S1002 described with reference to Fig. 18. Also in this case, if authentication of the user is failed, the flow does not advance to the next Step.

[0538] At Step S4003 the contents of print orders presently placed by the user authenticated at Step S4002 are displayed on the client computer 101. First, the print order data, having the same value as the user ID is searched from the order management table 3911.

[0539] In the following description, the data to be processed is represented by using an index i. The print order processing is represented by "print order data (i)" and the order status data is represented by "order status table (i)". The order ID in the print order data is represented by order ID (i).

[0540] At Step S4004 the index i is initialized to 1* in order to sequentially process the print order data.

[0541] Buttons 4113 and 4114 are used respectively for activating a deletion process and a correction process for the print order data. When the process is acti-

vated, the selected print order data and the activation type (deletion or correction) are transmitted to the center server.

[0542] The center server 102 encodes the transmission data received via the document supplier 3801 in RAM 1002, and activates an order corrector/deleter 3803 to be described later.

<Order corrector/deleter>

[0543] Fig. 42 is a flow chart illustrating the process to be executed by the order corrector/deleter. Data to be exchanged between the client computer 101 and center server 102 is performed by using the transmission protocol such as Hyper Text Transfer Protocol (HTTP) and File Transfer Protocol (FTP).

[0544] In this embodiment, when a user executes a connection process or a deletion process for print order data, the user order confirmation window 4101 displayed on CRT 2008 of the client computer 101 is used as described previously. The client computer 101 is used as a print order data input means such as KB 2008 to the document supplier 3801 of the center server 102 by using the network browser 502. The center server 102 stores the data supplied from the client computer 101 in RAM 1002, reads the order corrector/deleter 3803 from a storage medium such as HDD 1009 and develops it into RAM 1002 to make the application program useable. The order corrector/deleter 3803 executes the process by judging the process type as such as correction and deletion from the data supplied from the client computer 101 and stored in RAM 1002.

[0545] At Step S4201 the process type requested from the client computer 101 is discriminated by reading it from RAM 1002. If the process type is not "correction", the flow advances to Step S4204 without executing Steps S4202 and S4203.

[0546] Step S4202 is executed only if it is judged at Step S4201 that the discriminated process type is "correction". At Step S4201 the process type requested from the client computer 101 is discriminated from the client computer 101 and stored in RAM 1002 is read and the additional information of the print image received with reference to Fig. 18 are used.

[0547] At Step S4202 it is judged whether the print order data is edited and stored in a storage medium such as HDD 1009 as a temporary file. This file is transmitted from the center server 102 to the client computer 101 by using the transmission protocol such as FTP. The client computer 101 received the temporary file refers to the edit information in the temporary file to again execute the order placing process described with reference to Fig. 18 to thereby correct the print order data.

[0548] At Step S4203 it is judged whether the transmission file at Step S4202 was correctly received by the client computer 101. If not, the following steps are not executed and the process is terminated.

[0549] At Step S4204 the order ID in the print order data stored in RAM 1002 is read to delete all the data relevant to the order ID from the print order data stored in the order management table 3911 of the center server

[0550] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0551] Fig. 43 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4302 and a reception order process activation area 4303.

[0552] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server and confirms the order taking status at the print server. It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0553] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0554] In the reception order data display area 4302, data items 4304 to 4311 can be displayed.

[0555] Reference numeral 4304 represents a name of the print order data 401 which is received originally.

[0556] Reference numeral 4305 represents a name of the print order data 401 which is received originally.

[0557] Reference numeral 4305 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0558] Reference numeral 4306 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0559] Additional data is displayed as the information 4307 to 4311. For example, the information includes a fee, a due date, a share size, and copies.

[0560] Examples of display data in the reception order data display area 4302 are shown at 4313 to 4316. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0561] The reception order process activation area 4303 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4312 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0562] Fig. 44 is a flow chart illustrating a return order

[0563] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0564] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0565] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server 102.

[0566] It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0567] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0568] In the reception order data display area 4502, data items 4504 to 4511 can be displayed.

[0569] Reference numeral 4504 represents a name of the print order data 401 which is received originally.

[0570] Reference numeral 4505 represents a name of the print order data 401 which is received originally.

[0571] Reference numeral 4505 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0572] Reference numeral 4506 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0573] Additional data is displayed as the information 4507 to 4511. For example, the information includes a fee, a due date, a share size, and copies.

[0574] Examples of display data in the reception order data display area 4502 are shown at 4513 to 4516. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0575] The reception order process activation area 4503 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4517 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0576] Fig. 44 is a flow chart illustrating a return order

[0577] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0578] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0579] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server 102.

[0580] It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0581] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0582] In the reception order data display area 4502, data items 4504 to 4511 can be displayed.

[0583] Reference numeral 4504 represents a name of the print order data 401 which is received originally.

[0584] Reference numeral 4505 represents a name of the print order data 401 which is received originally.

[0585] Reference numeral 4505 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0586] Reference numeral 4506 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0587] Additional data is displayed as the information 4507 to 4511. For example, the information includes a fee, a due date, a share size, and copies.

[0588] Examples of display data in the reception order data display area 4502 are shown at 4513 to 4516. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0589] The reception order process activation area 4503 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4517 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0590] Fig. 44 is a flow chart illustrating a return order

[0591] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0592] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0593] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server 102.

[0594] It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0595] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0596] In the reception order data display area 4502, data items 4504 to 4511 can be displayed.

[0597] Reference numeral 4504 represents a name of the print order data 401 which is received originally.

[0598] Reference numeral 4505 represents a name of the print order data 401 which is received originally.

[0599] Reference numeral 4505 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0600] Reference numeral 4506 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0601] Additional data is displayed as the information 4507 to 4511. For example, the information includes a fee, a due date, a share size, and copies.

[0602] Examples of display data in the reception order data display area 4502 are shown at 4513 to 4516. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0603] The reception order process activation area 4503 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4517 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0604] Fig. 44 is a flow chart illustrating a return order

[0605] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0606] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0607] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server 102.

[0608] It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0609] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0610] In the reception order data display area 4502, data items 4504 to 4511 can be displayed.

[0611] Reference numeral 4504 represents a name of the print order data 401 which is received originally.

[0612] Reference numeral 4505 represents a name of the print order data 401 which is received originally.

[0613] Reference numeral 4505 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0614] Reference numeral 4506 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0615] Additional data is displayed as the information 4507 to 4511. For example, the information includes a fee, a due date, a share size, and copies.

[0616] Examples of display data in the reception order data display area 4502 are shown at 4513 to 4516. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0617] The reception order process activation area 4503 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4517 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0618] Fig. 44 is a flow chart illustrating a return order

[0619] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0620] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0621] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1008 of the print server 102.

[0622] It is assumed that the print order data 401 is already stored in the order management table 3911 of the printer server 121 by the local transmission/reception controller 3803.

[0623] In response to an operation from the input means such as KB 1008, the reception order list display 3901 of the print server 121 is read from ROM 1009, ROM 1009 or FDD 1010 and developed onto RAM 1002 to make it executable. The order list display 3901 searches all the print order data stored in the order management table 3911 and writes them in RAM 1002. The print order data is displayed on CRT 1008 to notify it to the operator.

[0624] In the reception order data display area 4502, data items 4504 to 4511 can be displayed.

[0625] Reference numeral 4504 represents a name of the print order data 401 which is received originally.

[0626] Reference numeral 4505 represents a name of the print order data 401 which is received originally.

[0627] Reference numeral 4505 represents an order ID of the print order data written in RAM 1002 from the order management table 3911 of the print server 121.

[0628] Reference numeral 4506 represents user information in the print order data written into RAM 1002 from the order management table 3911 of the print server 121.

[0629] Additional data is displayed as the information 4507 to 4511. For example, the information includes a fee, a due date, a share size, and copies.

[0630] Examples of display data in the reception order data display area 4502 are shown at 4513 to 4516. Each order can be selected by using the input means such as KB 1008 and a pointing device.

[0631] The reception order process activation area 4503 is constituted of a button for activating a process for presently received print order data. By an input operation from KB 1008 or the like, a designated process is activated. In this embodiment, a return button 4517 is displayed in this area to activate a return process to be described later.

<Return order transmission process>

[0632] Fig. 44 is a flow chart illustrating a return order

[0633] At Step S4205 all the data relevant to the order ID is deleted from the order status data stored in the order status table 3910 of the center server 102.

<File reception order list window>

[0634] Fig. 45 shows an example of a reception order list window. The reception order list window 321 is divided into a reception order data display area 4502 and a reception order process activation area 4503.

[0635] A process will be described, in which process an operator displays till the print order data presently received from the center server 102 on CRT 1

transmission process.

[0563] In this embodiment, the return order transmission process is activated by using the button 432 of the reception order list window 401. In this case, the order ID transmitted when the button 432 is displayed is stored in RAM 1002. The return order transmitter application program is read from ROM 1003, HDD 1009 or FDD 1010 and developed onto RAM 1002 to make it usable.

[0564] At Step S440 the order ID stored in RAM 1002 is read, and a temporary file having an order return transmission data file format to be later described with reference to Fig. 45 is generated and stored in RAM 1002.

[0565] At Step S4402 the order return transmission data file stored in RAM 1002 at Step S4401 is stored in the local transmission box 3912 or HDD 1009. A file transmission request to the local transmission/reception controller 4503 is performed by the process of storing a file in the local transmission box 3912.

[0566] At Step S4403 all the data relevant to the order ID stored in RAM 1002 is deleted from the order management table 3911 in HDD 1009 of the printer server 121. With this process, the print server 121 takes the original state before the order is received.

<Return order process transmission data format>

[0567] Fig. 45 shows the transmission data format to be used for the return process of this embodiment. This data is transmitted and received between the print server 121 and center server 101.

[0568] The transmission data format used in this embodiment uses "Standard General Markup Language" (SGML) or ISO 8879 similar to that shown in Fig. 13. Similar to that shown in Fig. 13, the transmission file stores tags representative of various transmission data contents in an area between the start tag <CAML> and tag </CAML>. The transmission/reception header transmission data 131 is omitted in Fig. 45 because the same data is also used in this embodiment.

[0569] As indicated at 4501, a return order ID which is used when the print server 121 requests the center server to execute the return process is written in an <ORDERID> tag, and CDE = "CANCEL" (representative of the return process is written in the <OR-DEF> tag.

<Return order reception process>

[0570] Fig. 46 is a flow chart illustrating the return order reception process to be executed by the order status contractor 3804. This process will be described with reference to Fig. 46.

[0571] The return transmission/reception data generated by the return order transmission processes executed by the print server 121 is transmitted via the local transmission/reception controller 3803 to the center server 102 and received by the center transmission/reception

controller 3805 of the center server 102. Upon reception of the return order transmission data, the center transmission/reception controller 3805 stores it in the center reception box 3813 as a return transmission data file. Next, the order status contractor is read from ROM 1003, HDD 1009 or FDD 1010 and developed onto RAM 1002 to make it usable and pass the file name of the return order transmission data file stored in the center reception box 3813 to the order status contractor 3804. The order status contractor 3004 analyzes the return order transmission data file to update the order status table 3810.

[0572] At Step S4601 the order status contractor writes the return order transmission data file passed from the center transmission/reception controller 3805 into RAM 1002 and analyzes this contents thereof to store the order ID in the file in RAM 1002.

[0573] At Step S4602 the order status data containing the order ID stored in Step S4601 is read from the order status table 3810 and written in RAM 1002.

[0574] At Step S4603 it is checked whether the order status data read at Step S4602 exists in RAM 1002. If it does not exist, the process is terminated.

[0575] At Step S4604 the status 204 of the order status data written in RAM 1002 is corrected to "image collected".

[0576] At Step S4605 the data stored in the order status data before this process is replaced by the corrected order status data in RAM 1002.

[0577] According to this embodiment, the image collecting separator is provided with the order taker for taking and analyzing a print order placed by a user; the edit image supplier for storing add images selected by the user for scaling a print image and supplying only useable images to the user; the original image position manager having a function of managing keeping locations of print original images; the image collector for selecting the keeping location having the smallest image data transmission cost among the keeping locations of print original images necessary for printing the print order and transmitting an image acquisition request and the order transmission process in accordance with a schedule registered in a reception schedule table 4712.

[0578] A reception order selector 4702 has a function of displaying the list stored in the unexecuted order table 4711 on CRT 2005 to allow the operator to select an order from the displayed list to thereby receive the order via the local transmission/reception controller 4701.

[0579] A reception schedule setter 4703 is an application program having a function of telling an automatic reception of print orders.

[0580] A schedule adder 4704 is an application program having a function of adding a schedule time to the reception schedule setter 4703.

[0581] The unexecuted order table 4711 is a database or searchable file stored in HDD 2009 and stores unexecuted order information received by the local transmission/reception controller 4701.

[0582] The reception schedule table 4712 stores in-

tus of print orders placed by the user.

[0583] The order collector/deliver for allowing a user to correct/delete a print order is also provided. Therefore, even if a print server is changed, it is easy to change the number of copies and the like so that a simpler order rules can be avoided. The work amount of the user entered an erroneous order can be reduced.

[0584] The return order transmitter allowing the print server to execute a return order process is also provided. Therefore, if a print order received from the center server cannot be printed because of any operation trouble, the print order can be returned to the center server and a user can change an output server if necessary.

[0585] In this embodiment, during the data reception process described with reference to Figs. 35A and 35B of the first embodiment, the operator selects the data in accordance with the data amount, the number of copies, sheet size, and due date in the reception data list. Also in this embodiment, the operator sets standard reception maximum amounts such as the total data amount, the total reception time, and the total number of copies, and data can be automatically received in the order of earlier due date.

[0586] Fig. 47 is a diagram showing the system structure according to the fourth embodiment of the invention. Components 701, 702, 704, 705, 711 to 716 are connected to those of the first embodiment shown in Fig. 7. Application programs 4701 to 4704 shown in Fig. 47 are read from ROM 2003, HDD 2009 or FDD 2010 and developed onto FAM 2002 to make them usable.

[0587] The local transmission/reception controller 4705 has the same function of the local transmission/reception controller 703 of the first embodiment shown in Fig. 7, and in addition, a function of storing a list of unexecuted orders from the center server 102 in an unexecuted order table 4711 and a function of executing a print order reception process in accordance with a schedule registered in a reception schedule table 4712.

[0588] A reception order selector 4702 has a function of displaying the list stored in the unexecuted order table 4711 on CRT 2005 to allow the operator to select an order from the displayed list to thereby receive the order via the local transmission/reception controller 4701.

[0589] Fig. 48 shows an example of a window displayed by the reception order selector 4702 on CRT 2006 of the print server 121.

[0590] In Fig. 48, reference numeral 4801 represents a transmission rate of the network interconnecting the print server 121 and center server 102. An initial value of the transmission rate is displayed in accordance with the previous reception record or the like. If this transmission rate is changed, this value can be changed by using KB 2003. With this change, a reception time estimated

[0592] In the list box 4802, a list of unreceived print orders is displayed. The displayed contents include receiver related information such as date amount and reception time estimated and print related information such as sheet size, the number of copies and/or data. The data amount shows the total amount of data to be transmitted or received and is represented by the unit of byte. The reception time estimated is calculated from the data amount and the transmission rate 4801 and is represented by the unit of minute. The due date is a date repesented by the operator wished. A print delivery method is either a delivery at a shop or a mail delivery.

[0593] The operator can select an order to be received, by using KB 2008. The selected order is displayed in a highlight state on the unreceived order list 4802. If the highlighted order is again selected the highlight state is released and the order is unselected.

[0594] Reference numeral 4803 represents the total transmission amount of the selected order which is represented by the unit of byte.

[0595] Reference numeral 4804 represents the total transmission time which is calculated from the total transmission amount 4803 and the transmission rate 4801.

[0596] Reference numeral 4805 represents a reception execution button. As this button is selected by using KB 2008, the reception Stop S3/51 of the first embodiment starts.

[0597] Reference numeral 4806 represents an exit button. When this button is selected, the reception order selector is terminated.

[0598] As the reception order selector is executed, the list of unreceived orders is received from the center server 102 and displayed on the unreceived order list 4802. The reception time estimated 4801 is calculated from the transmission rate 4801. When the operator selects the order to be received and the reception button 4805, the reception is performed.

<Reception schedule selector>

[0599] Fig. 49 shows an example of a window displayed by the reception schedule selector.

[0600] Reference numeral 5001 represents the total area for the total maximum number of copies which is entered by the operator by using KB 2008 by the unit of A4.

[0601] Reference numeral 4808 represents a button for adding a reception execution schedule. When the operator selects this button 4806 by using KB 2008, the schedule adder 4704 is executed.

[0602] Reference numeral 4807 represents a list box in which schedules are displayed. The schedules added by the schedule adder 4704 is displayed with a list of times such as dates and days of the week.

[0603] Reference numeral 4808 represents a button for saving the settings described above.

[0604] Reference numeral 4809 represents a button for cancelling the settings.

<Schedule adder>

[0605] Fig. 50 shows an example of a window displayed by the schedule adder.

[0606] Reference numeral 5001 represents a list box for selecting at what day of the week and at what date the reception is performed. The operator can submit a plurality of rows in this list box.

<Print Embodiment>

[0607] Fig. 51 is a diagram showing the structure of each processing component and management data of the center server 102. In Fig. 51, like elements to those of the first embodiment shown in Fig. 4 are represented by using identical reference numerals. The elements represented by identical reference numerals are the same as those of the first embodiment, and the description thereof is omitted.

[0608] A print image storage 5101 stores images, i.e., a print original image file of a high resolution supplied from the client computer 101, in a removable disk readable by HDD 1009 or FDD 1010.

[0609] A user group management table 5102 manages information of images supplied from the client computer 101, as will be later described with reference to Fig. 52.

[0610] In this embodiment, the client computer 101 has a function of adding information to images in the storage to transmit the information added (images to the center server) as a function of requesting to register, update and delete the images. The information to be added to images includes information on whether use or read of the images by the third party is permitted or inhibited and information on which user is permitted during what period, and other information.

<User group management table>

[0611] Fig. 52 is a diagram showing the user management table used in this embodiment. The user management table is stored in HDD 1009 of the center server 102 as a database or a searchable file, and is used when print images transmitted from the client computer 101 are stored, when the user requests to edit print images, or at other times.

[0612] Reference numeral 5201 represents a table storing the image ID of each image and its owner.

[0613] Reference numeral 5202 represents an image table linked to respective images and storing users' and their use periods. This information is transmitted from the client computer 101. Namely, this information can be freely by the owner of print images which were transmitted to the center server.

[0614] Reference numeral 5203 represents an image table storing a print image.

[0615] Reference numeral 5204 represents an image table of a user which can use the linked image.

[0616] Reference numeral 5205 represents an image table of the owner of the image, the user ID being determined uniquely to the image ID. If an image is generally publicized free or not free, this item is made blank and there is no linked table.

[0617] Reference numeral 5206 represents an image table of a user which can use the linked image.

[0618] Reference numeral 5207 represents an image table of the owner of the image, the user ID being determined uniquely to the image ID. This means that the print image can be used unlimitedly so long as it exists in the center server 102.

<Image registration from client computer>

[0619] Fig. 53 is a diagram showing the structure of each processing component and management data of the center server 102. In Fig. 51, like elements to those of the first embodiment shown in Fig. 4 are represented by using identical reference numerals. The elements represented by identical reference numerals are the same as those of the first embodiment, and the description thereof is omitted.

[0620] Fig. 54 is a diagram showing the structure of each processing component and management data of the center server 102. In Fig. 51, like elements to those of the first embodiment shown in Fig. 4 are represented by using identical reference numerals. The elements represented by identical reference numerals are the same as those of the first embodiment, and the description thereof is omitted.

[0621] Fig. 55 is a diagram showing the structure of each processing component and management data of the center server 102. In Fig. 51, like elements to those of the first embodiment shown in Fig. 4 are represented by using identical reference numerals. The elements represented by identical reference numerals are the same as those of the first embodiment, and the description thereof is omitted.

[0622] After all values are set, the operator selects the automatic reception execution button 4908 to register

the reception schedule to the print server. After this setting, the print order is automatically received at the set time.

[0623] If the order is bulky and the due date is today and the order is not received, an alarm line is written in a log file of HDD 2008.

[0624] The print server and center server of the fourth embodiment operate as described above.

[0625] According to the fourth embodiment, it is possible to provide an image collection/transmitter with the smallest cost without lowering user service contents such as selection of an output server.

[0626] A manager for storing data, transmission/recaption history in the storage and the data transmission/reception controller having a function of transmitting/receiving only the data still not transmitted/received when the transmission/recaption resumes after the transmission/recaption failure by using the data transmission/recaption history are provided. Accordingly, even in an unstable network environment such as mobile communications, the dial-up connection can be used reliably.

[0627] All unrecieved orders are not received but only the order selected by the operator is received. Accordingly, reception and print works can be performed efficiently.

[0628] The order not exceeding the preset maximum amount such as data amount is received. Accordingly, a more efficient and safe print work is possible.

[Fifth Embodiment]

[0629] In the first and second embodiments, original print images are registered from a floppy disk or CD-ROM, i.e., so-called local images are registered without intervening the network.

[0630] In the fifth embodiment, the print images are registered from the client computer 101 to the center server 102 via the network. Services similar to the first to fourth embodiments are also realized, and the registered images are provided with the security function to the owner of the registered images also to the third party, not the owner of the registered images.

<System structure>

[0631] The system structure of the fifth embodiment is the same as the first embodiment, so the description thereof is omitted. The client computer and print server are also the same as those of the first embodiments.

<Center server>

[0632] Fig. 51 is a diagram showing the structure of each processing component and management data of the center server 102. In Fig. 51, like elements to those of the first embodiment shown in Fig. 4 are represented by using identical reference numerals. The elements represented by identical reference numerals are the same as those of the first embodiment, and the description thereof is omitted.

[0633] A process of registering print images transmitted from the client computer 101 will be described. The image register 404 shown in Fig. 51 registers new original

inal images, deletes already registered images, moves or copies original images to the print server 122 or image server 112, in response to a request by the user of client computer 101.

[0844] The client computer 101 transmits original image base and information such as operation items, owner (user ID), user (user ID), and user period to the document supplier 401 shown in Fig. 51. The image register 404 acquires the original image and information.

[0845] Fig. 52 is a flow chart illustrating an image registration process to be executed by the image register 404. The image registration, move, copy and delete to be executed by the image register 404 will be described with reference to Fig. 53.

[0846] At Step S5300 the information acquired by the document supplier 401 is acquired by the image register 404.

[0847] At Step S5301 a code (hereinafter called an "operation code") for identifying the operation item is extracted from the information acquired at Step S5300, and stored in RAM 2002.

[0848] At Step S5302, the operation code stored in Step S5301 is checked. If the operation code corresponds to "new registration", the flow advances to Step S5303, whereas if not, the flow advances to Step S5311.

[0849] At Step S5303 the original image position management table 412 is searched to acquire the path name of the original image file corresponding to the image ID, to read the original image file from HDD 2009 or FD 2010, and to copy it to the center transmission box 407 as a new image file. The path name of the copied file is stored in RAM 2002.

[0850] At Step S5311 the operation code stored at Step S5301 is checked. If the operation code is "move" or "delete", the flow advances to Step S5312, whereas if not, the flow advances to Step S5313.

[0851] At Step S5312 by using the image ID stored at Step S5308, the original image position management table 412 is searched to delete data and original image file from the original image position management table.

[0852] At Step S5313 the number of original images to be processed for the user is checked. If there is an original image still not processed, the flow returns to Step S5301.

[0853] The registered print image can be processed thereafter in a manner similar to processing the print image described in the first to fourth embodiments. Similar services of the first to fourth embodiments can be provided.

<Edit image acquisition by client computer>

[0854] A process to be executed by the center server

when the user of the client computer 101 requests to acquire the add image will be described.

[0855] The document supplier 401 shown in Fig. 51 executes the processes of the first embodiment, and in addition the search, addition, update, and delete processes for the user group management table 5102.

[0856] The client computer 101 transmits information such as the operation items, user ID and image ID to the document supplier 401.

[0857] Fig. 54 is a flow chart illustrating the edit image supply process to be executed by the document supplier 401 received by the above-described information. The edit image supply process to be executed by the document supplier 401 will be described with reference to Fig. 54.

[0858] At Step S5401 the user ID and image ID stored in RAM at Steps S5300 and S5303, the user ID of a user

which can use the original image and the use period, are stored in the user group management table 5102 described with reference to Fig. 52.

[0859] Steps S5308 to S5312 are executed if the operation code stored in RAM 2002 at Step S5301 is not "new registration", i.e., if it is "move", "copy", or "delete".

[0860] At Step S5320 the image ID of an already registered original image to be processed is acquired from the original image position management table 412 and stored in RAM 2002.

[0861] At Step S5305 the operation code stored at Step S5301 is checked. If the operation code is "move" or "copy", the flow advances to Step S5310, whereas if not, the flow advances to Step S5311.

[0862] At Step S5310 by using the image ID stored at Step S5308, the original image position management table 412 is searched to acquire the path name of the original image file corresponding to the image ID, to read the original image file from HDD 2009 or FD 2010, and to copy it to the center transmission box 407 as a new image file. The path name of the copied file is stored in RAM 2002.

[0863] At Step S5311 the operation code stored at Step S5301 is checked. If the operation code is "move" or "delete", the flow advances to Step S5312, whereas if not, the flow advances to Step S5313.

[0864] At Step S5312 by using the image ID stored at Step S5308, the original image position management table 412 is searched to delete data and original image file from the original image position management table.

[0865] At Step S5313 the number of original images to be processed for the user is checked. If there is an original image still not processed, the flow returns to Step S5301.

[0866] The registered print image can be processed thereafter in a manner similar to processing the print image described in the first to fourth embodiments. Similar services of the first to fourth embodiments can be provided.

<Edit image acquisition by client computer>

[0867] A process to be executed by the center server

when the user of the client computer 101 requests to acquire the add image will be described.

[0868] The document supplier 401 shown in Fig. 51 executes the processes of the first embodiment, and in addition the search, addition, update, and delete processes for the user group management table 5102.

[0869] The client computer 101 transmits information such as the operation items, user ID and image ID to the document supplier 401.

[0870] Fig. 54 is a flow chart illustrating the edit image supply process to be executed by the document supplier 401 received by the above-described information. The edit image supply process to be executed by the document supplier 401 will be described with reference to Fig. 54.

[0871] At Step S5401 a code (hereinafter called an

"operation code") for identifying the process item is acquired and stored in RAM 2002.

[0872] At Step S5402, the operation code stored at Step S5401 is checked. If the operation code corresponds to "edit screen acquisition", the flow advances to Step S5403, whereas if not, the process is terminated.

[0873] At Step S5403 an image ID is acquired and stored in RAM 2002.

[0874] At Step S5404 by using the image ID acquired at Step S5403, the user group management table 5102 is searched to judge whether the previously acquired image ID exists in the table. If it exists, the flow advances to Step S5405, whereas if not, the process is terminated and the process of acquiring an edit image of the original image registered in the print server 121 or image server 110 starts as in the first embodiment.

[0875] At Step S5405 it is checked whether the user ID stored in the table is the same as the user ID of the user who searched at Step S5401. If coincident, the flow advances to Step S5407, whereas if not, the flow ends.

[0876] At Step S5407 by using the image ID acquired at Step S5403, the edit image is acquired by using the edit image supplier 402.

[0877] At Step S5408, the edit image acquired at Step S5407 is transmitted to the client computer 101. At Step S5409 by using the user ID acquired at Step S5405, the table is linked to the row searched at Step S5404 as searched in the same user ID exists, the flow advances to Step S5410, whereas if not, the flow ends.

[0878] At Step S5410 an error process is performed and a message to this effect is transmitted to the client computer 101.

[0879] At Step S5411 an error process is performed and a message to this effect is transmitted to the client computer 101, and the center server controls the client computer which acquires and edits the edit image of the registered print image.

[0880] The present invention may be applied to a system constituted of a plurality of apparatuses or to a system constituted of a single apparatus. The invention is obviously applicable to the case wherein the embodiment functions can be realized by supplying programs to the system or apparatus. In this case, a storage medium storing such programs constitutes the invention. The system or apparatus reads the programs from the storage medium and operates in a predetermined manner.

[0881] The object of the invention can be achieved by supplying the system or apparatus with a storage medium containing program codes of software realizing the embodiment functions and making a computer (or CPU or MPU) of the system or apparatus read and execute the

program codes stored in the storage medium. In this case, the software program codes themselves read from the storage medium realize the novel functions of the invention. Therefore, the storage medium storing such program codes constitutes the invention.

[0882] The storage medium storing such program codes may be a floppy disk, a hard disk, an optical disk, a magneto-optical disk, a CD-ROM, a CD-R, a magnetic tape, a non-volatile memory card, a ROM, and the like. The invention also includes not only the case wherein the embodiment functions are realized by executing the program codes read by a computer, but also the case wherein the embodiment functions are realized by an OS on which the computer runs performance part or the whole of actual processes in accordance with the program codes.

[0883] Furthermore, the invention also includes the case wherein the program codes read from the storage medium are written in a memory of a function expansion board or unit connected to the computer, and a CPU or the like of the function board or unit executes part of the whole of actual processes for realizing the embodiment functions.

[0884] As described above, according to the present invention, the image position management system capable of communicating with a plurality of image storage via a network, has a manager for managing specific information indicating the image storage in which image data is stored; and an identifier for identifying the image storage storing the image data in accordance with the specific information stored in the manager, in response to a request for the image data from an external apparatus. Accordingly, a user is required only to memorize and use the image ID uniquely assigned to the image data file in order to acquire and process the image data file. Further, by managing and storing image data of an owner together with the information such as owner and user of the image data, it becomes possible to make or not to make public the image data to the third party.

[0885] *Claims*

1. A center server for collecting an image in response to a print order, comprising:

a managing means for managing position information indicating a keeping location of image data designated by the print order in accordance with the print order and the position information managed by said managing means, when the print order is received from an external apparatus;

an image collecting means for collecting image data designated by the print order in accordance with the print order and the position information managed by said managing means, when the print order is received from an external apparatus;

and a center server, and the center server controls the client computer which acquires and edits the edit image of the registered print image.

[0886] The present invention may be applied to a system constituted of a plurality of apparatuses or to a system constituted of a single apparatus. The invention is obviously applicable to the case wherein the embodiment functions can be realized by supplying programs to the system or apparatus. In this case, a storage medium storing such programs constitutes the invention. The system or apparatus reads the programs from the storage medium and operates in a predetermined manner.

[0887] The object of the invention can be achieved by supplying the system or apparatus with a storage medium containing program codes of software realizing the embodiment functions and making a computer (or CPU or MPU) of the system or apparatus read and execute the

10. A center server according to claim 1, further comprising print progress managing means for managing progress status of the print order received from the external apparatus, wherein said print instructing means transmits the print request to the print controller in response to the print order managed by said print progress managing means, if all sets of the image data designated by the print order are collected by said image collecting means.
11. A center server according to claim 10, wherein said print progress managing means updates the progress state of the print order for which the print request was transmitted by said print instructing means.
12. A center server according to claim 10, wherein said print progress managing means updates the progress status of the print order for which printing was completed upon reception of a print completion notice from the print controller.
13. A center server according to claim 10, further comprising correcting means for changing/deleting the progress status of the print order managed by said print progress managing means in response to a request from the external apparatus.
14. A center server according to claim 10, further comprising correcting means for changing the progress status of the print order managed by said print progress managing means to "print controller un-received" in response to a request from the print controller.
15. A center server according to claim 1, wherein said print instructing means and said print controller are connected synchronously, and said print instructing means transmits the print request to the print controller when said print instructing means is connected to the print controller.
16. A center server according to claim 15, wherein the print controller corresponds to a print shop having an image editing apparatus and an image printing apparatus and connected to the Internet.
17. A center server according to claim 1, wherein the print request includes at least identification information for identifying the image data and edit information for editing the image data.
18. A center server according to claim 17, wherein the print request is written in an XML format.
19. A center server according to claim 1, wherein said managing means updates the position information when the image data is moved.

Order to a print controller.

2. A center server according to claim 1, further comprising image position determining means for determining the keeping location where the image data for the print order received from the external apparatus is stored, in accordance with the position information managed by said managing means, wherein said image collecting means collects the image data from the keeping location determined by said image position determining means.
3. A center server according to claim 2, wherein said image position determining means selects the keeping location with a smallest transmission cost, if there are a plurality of keeping locations storing a same image.
4. A center server according to claim 2, wherein if the keeping location of the image data determined by said image position determining means is an external image storage, said image collecting means transmits an image request for the image data to the external image storage and collects an image by receiving the image data from the image storage in response to the image request.
5. A center server according to claim 1, wherein said managing means manages a plurality of position information per one set of the image data.
6. A center server according to claim 1, wherein the position information managed by said managing means is position information of an apparatus which stores the image data.
7. A center server according to claim 1, further comprising:
 - receiving means for receiving the print order from the external apparatus; and
 - analyzing means for analyzing the print order received by said receiving means, wherein said image collecting means collects the image data in accordance with an analysis result by said analyzing means.
8. A center server according to claim 1, further comprising image registering means for registering the image data received from the external apparatus in image storing means, wherein said managing means manages new position information of the image data registered by said image registering means.
9. A center server according to claim 1, wherein said managing means updates the position information when the image data is moved.

information indicating a keeping location of image data;

10. A center server according to claim 1, further comprising image data designating means for acquiring image data designated by the print order from the keeping location in accordance with the print order and the position information managed by said managing means, and editing the acquired image data to generate print data in accordance with the print order, when the print order is received from an external apparatus; and output means for outputting the print data edited and generated by said editing means.

20. A print controller according to claim 19, wherein said editing means edits and generates the print data in accordance with image data received cognizant with the print order from the external apparatus and the acquired image data.

21. A print controller according to claim 19, wherein the position information managed by said image managing means is a path of a storage in the print controller.

22. A print controller according to claim 19, further comprising print order managing means for managing progress status of the print order received from the external apparatus.

23. A print controller according to claim 22, wherein the progress status of the print order managed by said print order managing means includes at least print standby status or print completion status.

24. A print controller according to claim 20, further comprising order returning means for changing the progress status of the print standby state or the print completion status to an unreceived state by notifying an image collector in response to an instruction from the external apparatus.

25. A print controller according to claim 19, further comprising transmission/reception means for transmitting/receiving data to/from the external apparatus, wherein said transmission/reception apparatus and the external apparatus are connected asynchronously.

26. A print controller according to claim 25, wherein said transmission/reception apparatus and the external apparatus are connected through dial-up.

27. A print controller according to claim 25, wherein said transmission/reception means receives the print order from the external apparatus and transmits identification information for identifying the print order for which printing was completed in the external apparatus, when said transmission/reception

information is connected to the external apparatus.

28. A print controller according to claim 25, wherein when the image data is requested from the external apparatus to said transmission/reception means, the requested image data is acquired in accordance with the position information managed by said image managing means, and said transmission/reception means transmits the acquired image data to the external apparatus.

29. A print controller according to claim 25, further comprising registration means for registering the image data in a storage of the print controller, wherein when the image data is registered by said register means, said image managing means stores and manages the position information of the keeping location of the image data and image identification information of the image data, and said transmission/reception means transmits the newly registered position information and the image identification information to the external apparatus.

30. A print controller according to claim 29, further comprising image generating means for generating second image data from first image data registered in the storage, the second image data having a lower resolution than the first image data, wherein said transmission/reception means transmits the second image data generated by said image generating means, the position information of the first image data, and the image identification information indicating a correspondence between the first and second image data, to the external apparatus.

31. A print controller according to claim 20, wherein said image managing means updates the position information when the keeping position of the managed image data is changed.

32. A print controller according to claim 24, wherein said image managing means deletes the position information when the managed image data is deleted, and said transmission/reception means transmits a notice that the image data was deleted to the external apparatus.

33. A method of collecting an image in response to a print order, comprising:

a managing step of managing position information indicating a keeping location of image data; an image collecting step of collecting image data, an image managing step of collecting image data designated by the print order in accordance with the print order and the managed position information managed, when the print order is received from an external apparatus, and a print instructing step of transmitting the image

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| EP 0 977 113 A2 | 84 | a print progress managing step of managing the progress status of the print order received from the external apparatus, wherein said print controller comprises a print request basing upon the print order to a print controller. | data collected at said image collecting step and a print request basing upon the print order to a print controller. |
| 34. A method according to claim 33, further comprising an image position determining step of determining the keeping location where the image data for the print order received from the external apparatus is stored, wherein said image collecting step collects the image data from the keeping location determined at said image position determining step. | 5 | 43. A method according to claim 42, wherein said print progress managing step updates the progress status of the print order for which the print request was transmitted at said print instructing step. | 43. A method according to claim 42, wherein said print progress managing step updates the progress status of the print order for which the print request was transmitted at said print instructing step. |
| 35. A method according to claim 34, wherein said image position determining step selects the keeping location with a smallest transmission cost, if there are a plurality of keeping locations storing a same image. | 10 | 44. A method according to claim 42, wherein said print progress managing step updates the progress status of the print order for which printing was completed, upon reception of a print completion notice from the print controller. | 44. A method according to claim 42, further comprising a correcting step of changing the progress status of the print order managed at said print progress managing step in response to a request from the external apparatus. |
| 36. A method according to claim 34, wherein, if the keeping location of the image data determined at said image position determining step is an external image storage, said image collecting step transmits an image request for the image data to the external image storage and collects an image by receiving the image data from the image storage in response to the image request. | 15 | 45. A method according to claim 42, further comprising a correcting step of changing the progress status of the print order managed at said print progress managing step in response to a request from the external apparatus. | 45. A method according to claim 42, further comprising a correcting step of changing the progress status of the print order managed at said print progress managing step to "print controller unregistered" in response to a request from the print controller. |
| 37. A method according to claim 33, wherein said managing step manages a plurality of position information per one set of the image data. | 20 | 46. A method according to claim 42, further comprising a correcting step of changing the progress status of the print order managed at said print progress managing step in response to a request from the external apparatus. | 47. A method according to claim 33, wherein said print instructing step asynchronously connects an image collector controlled by the method and the print controller, and said print instructing step transmits the print request to the print controller when the image collector is connected to the print controller. |
| 38. A method according to claim 33, further comprising, a receiving step of receiving the print order from the external apparatus; and an analyzing step of analyzing the print order received at said receiving step, wherein said image collecting step collects the image data in accordance with an analysis result. | 25 | 48. A method according to claim 47, wherein the print controller corresponds to a print shop having an image editing apparatus, and an image printing apparatus, and said print controller is connected to the print controller when the image data is moved. | 48. A method according to claim 47, wherein the print controller corresponds to a print shop having an image editing apparatus, and an image printing apparatus, and connected to the print controller when the image data is moved. |
| 39. A method according to claim 33, further comprising, a receiving step of receiving the print order from the external apparatus; and an analyzing step of analyzing the print order received at said receiving step, wherein said image collecting step collects the image data in accordance with an analysis result. | 30 | 49. A method according to claim 33, wherein the print request includes at least identification information for identifying the image data and edit information for editing the image data. | 49. A method according to claim 33, wherein the print request includes at least identification information for identifying the image data and edit information for editing the image data. |
| 40. A method according to claim 33, further comprising an image registering step of registering the image data received from the external apparatus in image storing means, wherein said managing step manages new position information of the image data registered at said image registering step. | 35 | 50. A method according to claim 49, wherein the print request is written in an XML format. | 50. A method according to claim 49, wherein the print request is written in an XML format. |
| 41. A method according to claim 33, wherein said managing step updates the position information when the image data is moved. | 40 | 51. A print controlling method comprising: | 51. A print controlling method according to claim 50, further comprising a register step of registering the image data to the external apparatus. |
| 42. A print controlling method according to claim 50, further comprising a register step of registering the image data in a storage of the print controller, wherein when the image data is registered at said register step, said image managing step stores and manages the position information of the keeping location as the position information of the keeping location of the image data and image identification information of the image data, and said transmission/reception/recognition step transmits the newly registered position information and the image identification information to the external apparatus. | 45 | 52. A print controlling method according to claim 51, further comprising an image generating step of generating second image data from first image data transferred in a storage, the second image data having a lower resolution than the first image data, wherein said transmission/reception/recognition step transmits the second image data generated at said image generating means, the position information of the first image data, and the image identification information indicating a correspondence between the first and second image data, to the external apparatus. | 42. A print controlling method according to claim 51, further comprising a print order managing step of managing the progress status of the print order received from the external apparatus. |
| 43. A print controlling method according to claim 51, wherein the progress status of the print order managed at said print order managing step includes at least print standby status or print complete status. | 50 | 53. A print controlling method according to claim 52, wherein the position information managed at said image managing step is a path of a storage in the print controller. | 53. A print controlling method according to claim 51, further comprising a print order managing step of managing the progress status of the print order received from the external apparatus. |
| 44. A print controlling method according to claim 51, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 55 | 54. A print controlling method according to claim 53, wherein the progress status of the print order managed at said print order managing step includes at least print standby status or print complete status. | 54. A print controlling method according to claim 53, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 45. A print controlling method according to claim 51, further comprising an order returning step of changing the progress status of the print standby state or the print completion status to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 60 | 55. A print controlling method according to claim 54, wherein the progress status of the print order managed at said print order managing step includes at least print standby status or print complete status. | 55. A print controlling method according to claim 54, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 46. A print controlling method according to claim 51, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 65 | 56. A print controlling method according to claim 55, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 56. A print controlling method according to claim 55, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 47. A print controlling method according to claim 55, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 70 | 57. A print controlling method according to claim 57, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 57. A print controlling method according to claim 57, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 48. A print controlling method according to claim 57, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 75 | 58. A print controlling method according to claim 59, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 58. A print controlling method according to claim 59, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 49. A print controlling method according to claim 59, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 80 | 59. A print controlling method according to claim 60, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 59. A print controlling method according to claim 60, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |
| 50. A print controlling method according to claim 60, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 85 | 60. A print controlling method according to claim 57, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. | 60. A print controlling method according to claim 57, further comprising a transmission/reception step of changing the progress status of the print order managed at said print order managing step to an unregistered status by notifying an image collector in response to an instruction from the external apparatus. |

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| EP 0 977 113 A2 | 88 | 6. A machine-readable storage medium storing a print control program, the program comprising:
completion information is still not transmitted. |
| EP 0 977 113 A2 | 89 | 72. An information processing apparatus according to claim 67, wherein the information processing apparatus is applied to a system in which the external apparatus prints the data file in accordance with a print request from a document processing apparatus. |
| EP 0 977 113 A2 | 90 | 73. An information processing apparatus according to claim 67, wherein the transmission data file is generated at said printing location in accordance with the print order and the position information managed at said managing location, and, editing has acquired image data to generate print data in accordance with the print order, when the print data is received from an external apparatus; and an output step of outputting the print data edited and generated at said editing means. |
| EP 0 977 113 A2 | 91 | 74. An information processing apparatus for data transmission/reception to/from an external apparatus via a network, comprising:
storage means for storing a transmission data file and a data file; and transmission/reception control means for controlling the data transmission/reception of the data file to/from the external apparatus in accordance with the transmission data file. |
| EP 0 977 113 A2 | 92 | 75. An information processing apparatus according to claim 67, wherein the transmission data file includes transmission/reception control information for controlling an order at the external apparatus with the transmission data file. |
| EP 0 977 113 A2 | 93 | 76. An information processing apparatus according to claim 67, wherein the transmission data file includes transmission/reception control information for identifying the data file in accordance with the transmission data file and the data file corresponding to a print order requested from the external apparatus. |
| EP 0 977 113 A2 | 94 | 77. An information processing apparatus according to claim 67, further comprising generating means for generating transmission/reception control information for controlling the data transmission/reception of the data file in accordance with the transmission data file, wherein said transmission/reception control means controls the data transmission/reception in accordance with the generated transmission/reception control information. |
| EP 0 977 113 A2 | 95 | 78. An information processing apparatus according to claim 70, wherein the transmission/reception control information includes transmission completion information for indicating a transmission completion of the data file, and said transmission/reception control means controls the data transmission/reception in accordance with the generated transmission/reception control information. |
| EP 0 977 113 A2 | 96 | 79. An information processing apparatus according to claim 67, wherein said transmission/reception control means controls the data file in accordance with the print request from a document processing apparatus. |
| EP 0 977 113 A2 | 97 | 80. A data transmission method for an information processing apparatus for data transmission/reception to/from an external apparatus via a network, comprising:
a storage step of storing a transmission data file and a data file in a storage of the information processing apparatus; and a transmission/reception control step of controlling the data transmission/reception of the data file to/from the external apparatus in accordance with the transmission data file. |
| EP 0 977 113 A2 | 98 | 81. A data transmission method according to claim 80, wherein the transmission data file includes transmission/reception identification information for identifying the information processing apparatus and the external apparatus and order information for controlling an order at the external apparatus. |
| EP 0 977 113 A2 | 99 | 82. A data transmission method according to claim 81, wherein the order information includes identification information for identifying the data file used by the print order. |
| EP 0 977 113 A2 | 100 | 83. A data transmission method according to claim 80, further comprising a generating step of generating transmission/reception control information for controlling the data transmission/reception of the data file in accordance with the transmission data file, wherein said transmission/reception control step controls the data transmission/reception in accordance with the generated transmission/reception control information. |
| EP 0 977 113 A2 | 101 | 84. A data transmission method according to claim 83, wherein the transmission/reception control information includes transmission completion information representative of a transmission completion of the data file, and said transmission/reception control step controls the data transmission/reception of the data file for which the transmission completion information is still not transmitted. |
| EP 0 977 113 A2 | 102 | 85. A data transmission method according to claim 80, |
| EP 0 977 113 A2 | 103 | wherein in the data transmission method is applied to a system in which the external apparatus prints the data file in accordance with a print request from a document processing apparatus. |
| EP 0 977 113 A2 | 104 | 86. A data transmission method according to claim 80, wherein the data transmission method is a method of data transfer of a center server or collecting the data file of an image and making the external apparatus print the data file in accordance with the print request, if a transmission method responding to the print request from a document processing apparatus is asynchronous, and a transmission method for the external apparatus is a positive transmission path establishment and transmission made by the external apparatus. |
| EP 0 977 113 A2 | 105 | 87. A data transmission method according to claim 80, wherein the data transmission method is a method of controlling data transfer of a center server for collecting the data file of an image and making the external apparatus print the data file in accordance with the print request, and said transmission/reception control step controls to transmit a list of print orders to the external apparatus and transmits the transmission data file and the data file to the external apparatus in response to a print order requested from the external apparatus. |
| EP 0 977 113 A2 | 106 | 88. A data transmission method according to claim 80, wherein the data transmission method is a method of controlling data transfer of a print server for receiving the data file in accordance with the transmission data file supplied from the external apparatus and generating print data in accordance with the transmission data file and the data file, and said transmission/reception control step controls to transmit the transmission data file and the data file, and said transmission/reception control step controls to transmit a list of print orders from the external apparatus to the external apparatus and transmits a request for a print order to be received, to the external apparatus. |
| EP 0 977 113 A2 | 107 | 89. A data transmission method according to claim 80, further comprising a selection step of displaying the print order to be received on a display means in accordance with the list of print orders and selecting the print order to be received, wherein said transmission/reception control step controls to transmit the print order to be received, wherein said transmission/reception control step controls to transmit a reception request for the selected print order to the external apparatus. |
| EP 0 977 113 A2 | 108 | 90. A data transmission method according to claim 80, further comprising a reception schedule setting step of setting information for receiving data from the external apparatus, wherein the print order to be received when the data is reached from the external apparatus is automatically selected in accordance with the information set at said reception schedule setting step. |

91. A data transmission method according to claim 90, wherein the transmission data file has an SGML format.

92. A data transmission method according to claim 90, wherein said transmission/reception control step activates service software in accordance with contents of the received transmission data file.

93. An information processing apparatus according to claim 94, further comprising transfer controlling means for controlling, when the image data is removed or copied from its external image storage apparatus to another image storage apparatus, to receive the image data from the image storage apparatus at a move source on a copy source and transfer the image data to the image storage apparatus at a move target or a copy target.

94. An information processing apparatus for managing a position of an image, the apparatus being capable of communicating with a plurality of image storing apparatuses via a network, comprising:

a transmission/reception control step of controlling the data transmission/reception of the data file from the external apparatus in accordance with the transmission data file;

a storage step of storing a transmission data file and a data file in a storage of the information processing apparatus; and

a transmission/reception control step of controlling the data transmission/reception of the data file from the external apparatus in accordance with the transmission data file.

95. An information processing apparatus according to claim 94, wherein said managing means for managing the specific information by using identification information for identifying the image data requested by an external apparatus in accordance with the specific information stored in said managing means.

96. An information processing apparatus according to claim 94, wherein said managing means manages the specific information by using identification information for identifying each set of image data corresponding to each of a plurality of resolutions of an image.

97. An information processing apparatus according to claim 94, wherein said managing means manages the specific information for identifying the external image storage apparatus storing the image data requested by an external apparatus in accordance with the specific information stored in said managing means.

98. An information processing apparatus according to claim 97, wherein the transmission data file includes registration information indicating that image data is newly registered and change information indicating a change of the keeping location of the image data.

99. An information processing apparatus according to claim 94, further comprising updating means for updating the specific information in accordance with position update information of the image data transmitted from the external image storage.

95. An information processing apparatus according to claim 97, wherein the transmission request for the image data to an external apparatus, wherein it is necessary to acquire the image data from the external image storage apparatus, said requesting step transmits the transmission request to the external image storage apparatus identified at said identifying step.

100. An information processing apparatus according to claim 94, further comprising transfer controlling means for controlling, when the image data is removed or copied from its external image storage apparatus to another image storage apparatus, to receive the image data from the image storage apparatus at a move source on a copy source and transfer the image data to the image storage apparatus at a move target or a copy target.

101. An information processing apparatus according to claim 100, further comprising acquiring means for acquiring the image data from the external apparatus in response to the transmission request for the image data transmitted by said requesting means, wherein said acquiring means acquires the image data whose keeping location is identified by the external apparatus by using the specific information managed by an image storage of the external apparatus.

102. An information processing apparatus according to claim 94, further comprising registering means for receiving a print image from a client computer and registering a print image in an image storage, wherein said managing means manages the specific information of the registered print image.

103. An information processing apparatus according to claim 102, further comprising image generating means for generating an edit image from the registered print image and storing the edit image in the image storage, wherein the generated edit image is transmitted to the external apparatus issued the transmission request for the image data.

104. An information processing apparatus according to claim 94, wherein the information processing apparatus is applied to a system, in which image data necessary for a print request is acquired from a plurality of image storing apparatuses in accordance with

the print request transmitted from a document processing apparatus.

105. An image position managing method for an information processing apparatus for managing a position of an image, the apparatus being capable of communicating with a plurality of image storing apparatuses via a network, the method comprising:

a managing step of managing specific information representative of the image storing apparatus, storing image data by storing the specific information in a storage; and an identifying step of identifying the image apparatus storing the image data requested by an external apparatus in accordance with the specific information stored in the storage.

106. An image position managing method according to claim 105, wherein said managing step manages the specific information by using identification information for identifying each set of image data corresponding to each of a plurality of resolutions of an image.

107. An image position managing method according to claim 105, wherein said managing step manages the specific information including apparatus identification information for identifying the external image storage storing apparatus storing the image data and location identification information for identifying a keeping location in the information processing apparatus.

108. An image position managing method according to claim 105, further comprising an updating step of updating the specific information in accordance with position update information of the image data transmitted from the external image storage.

109. An image position managing method according to claim 105, wherein the position update information includes registration information indicating that image data is newly registered and change information indicating a change of the keeping location of the already stored image data.

110. An image position managing method according to claim 105, further comprising a transfer controlling step of controlling, when the image data is moved or copied from the external image storage apparatus to another image storage apparatus, to receive the image data from the image storage apparatus at a move source or a copy source and transfer the image data to the image storage apparatus at a move target or a copy target.

111. An image position managing method according to claim 105, further comprising updating means for updating the specific information in accordance with position update information of the image data transmitted from the external image storage.

106. An image position managing method according to claim 105, further comprising an acquiring step of acquiring the image data from the external apparatus in response to the transmission request for the image data transmitted at said requesting step, wherein said acquiring step acquires the image data to whose keeping location is identified by the external apparatus by using the specific information managed by an image storage of the external apparatus.

107. An image position managing method according to claim 105, further comprising a registering step of registering a print image in an image storage, wherein said managing step manages the specific information of the registered print image.

108. An image position managing method according to claim 105, further comprising an identifying step of identifying an edit image from the registered print image and storing the edit image in the image storage, wherein the generated edit image is transmitted to the external apparatus issued the transmission request for the image data.

109. An image position managing method according to claim 105, further comprising an identifying step of identifying specific information representative of the image storing apparatus storing image data by storing the specific information in a storage, and an identifying step of identifying the image apparatus storing the image data requested by an external apparatus in accordance with the specific information stored in the storage.

110. An image position managing method according to claim 105, further comprising a controlling step of controlling, when the image data is moved or copied from the external image storage apparatus to another image storage apparatus, to receive the image data from the image storage apparatus at a move source or a copy source and transfer the image data to the image storage apparatus at a move target or a copy target.

111. An image position managing method according to claim 105, further comprising an updating step of updating the specific information in accordance with position update information of the image data requested by an external apparatus in accordance with the specific information stored in the storage.

FIG. 1

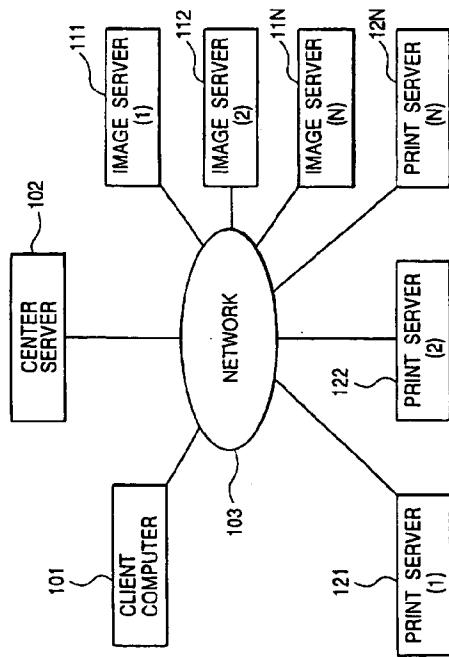


FIG. 2

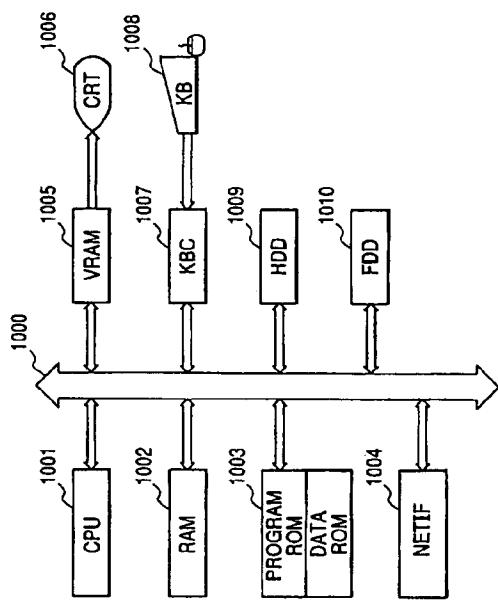


FIG. 3

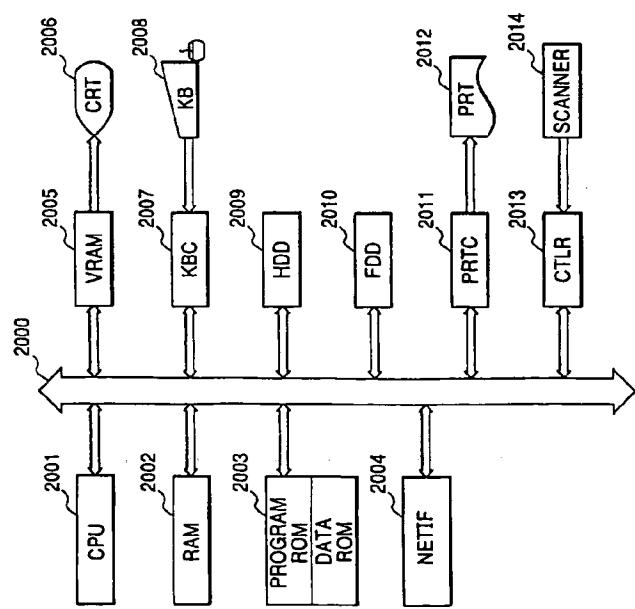


FIG. 4

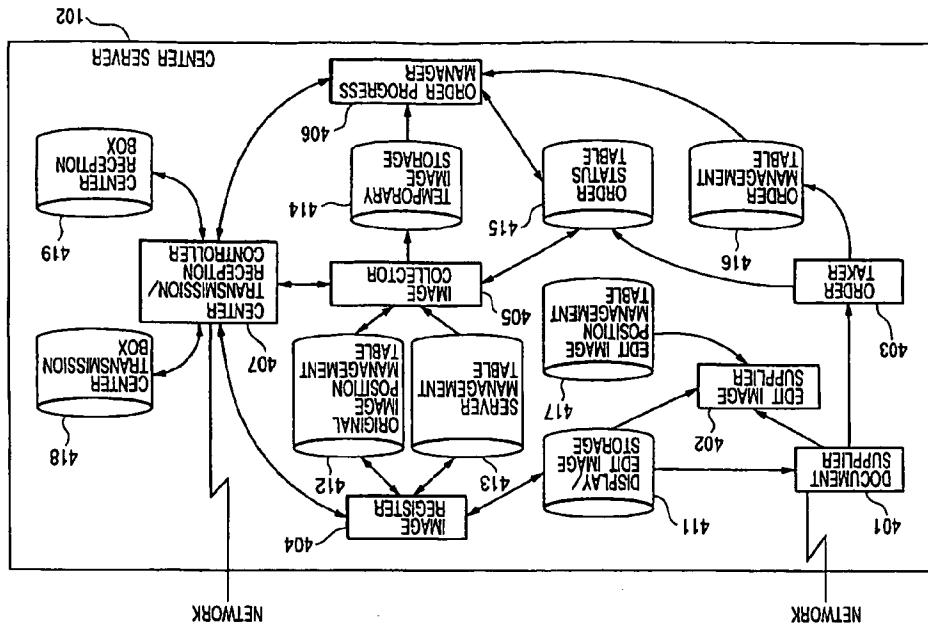


FIG. 5

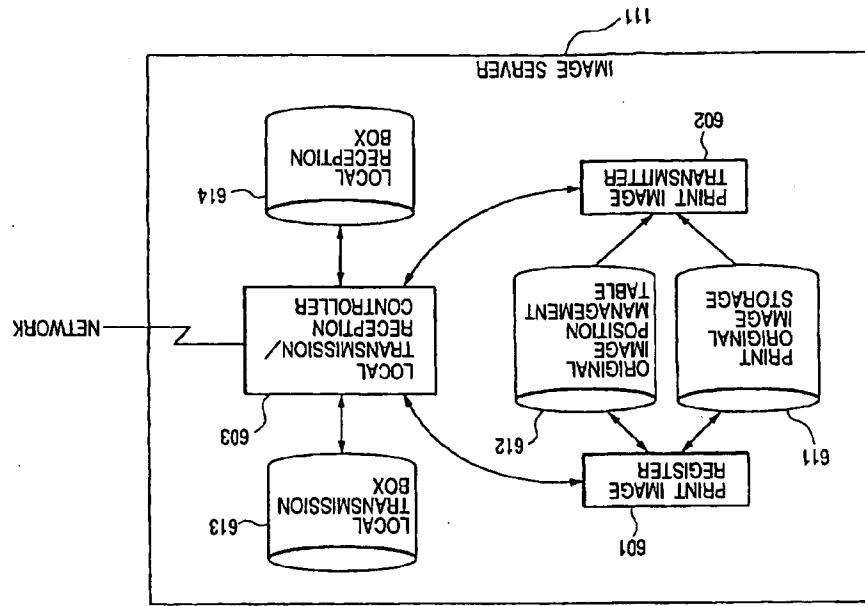
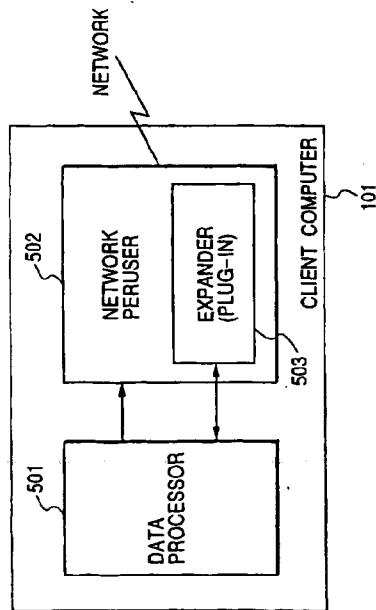
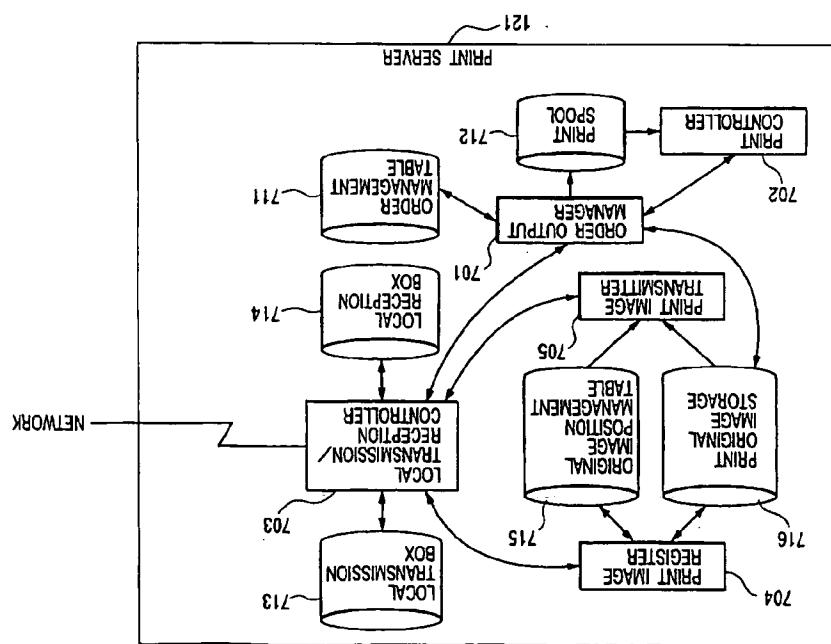


FIG. 6



55

7

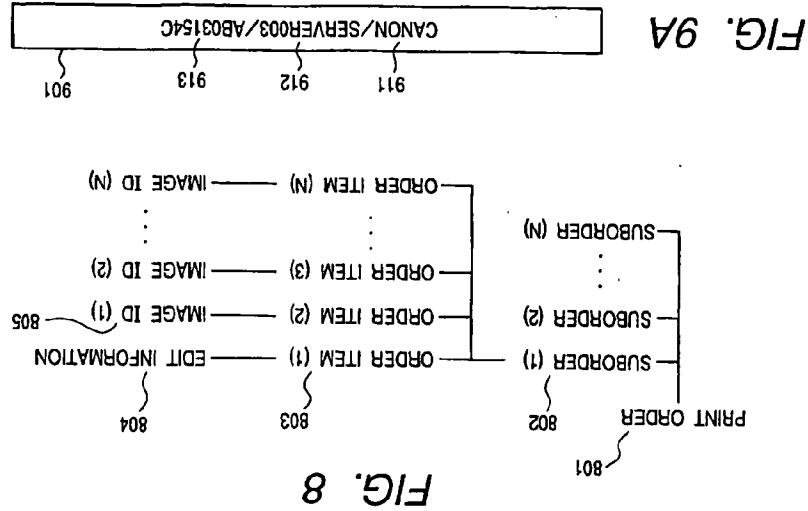


FIG. 8

55

FIG. 9B

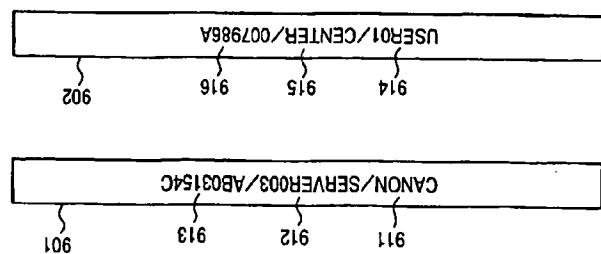


FIG. 9A

FIG. 10

| ORDER ID | SUBORDER ID | IMAGE ID | STATUS |
|---------------|-------------|------------------------|-----------------|
| USR1/PC1/0002 | - | - | BEING COLLECTED |
| USR1/PC1/0002 | 0001 | - | BEING COLLECTED |
| USR1/PC1/0002 | 0001 | CANON/PS5/199801010758 | BEING COLLECTED |
| USR1/PC1/0002 | 0001 | CANON/PS5/199801050027 | COLLECTED |

FIG. 11

| SERVER ID | PRIORITY |
|-----------|----------|
| PS001 | 100 |
| PS002 | 200 |
| PS001 | 300 |

FIG. 11

| IMAGE ID | OWNER | KEEPING LOCATION | ADDITIONAL INFORMATION |
|--|--------|------------------------|------------------------|
| 1201 | 1202 | 1203 | 1204 |
| CANON/PS01/1998ABC001 | USR123 | E : \spool \image1.jpg | - |
| CANON/PS01/1998ABC002 | - | - | 1212 |
| CANON/PS01/1998ABC003 | - | IS01 | 1211 |
| CANON/PS01/1998ABC004 | - | IS02 | 1213 |
| CANON/PS01/1998ABC005 | - | PS07 | 1214 |
| ORIGINAL IMAGE POSITION MANAGEMENT TABLE [A] | | | |

FIG. 12B

| IMAGE ID | OWNER | KEEPING LOCATION | ADDITIONAL INFORMATION |
|--|--------|------------------------|------------------------|
| 1201 | 1202 | 1203 | 1204 |
| CANON/PS01/1998ABC001 | USR123 | IS01 | 1211 |
| CANON/PS01/1998ABC002 | - | E : \spool \image1.jpg | 1212 |
| CANON/PS01/1998ABC003 | - | IS02 | 1213 |
| CANON/PS01/1998ABC004 | - | PS07 | 1214 |
| ORIGINAL IMAGE POSITION MANAGEMENT TABLE [B] | | | |

FIG. 12A

FIG. 13

```

<CAML>
  <TRANS ID="1000100033000001">
    <SENDER ID="CENTER" TIME="12/20/1997 11:26:38 JST" />
    <TRANS>
      <RECEIVER ID="PS01" />
      <ORDER ID="USR1345" CENTER="00001SHOP" PS01"OPE="NEW">
        <SUBORD ID="1000100033000101" DATE="1997/12/20" CHARGE="2300">
          <SUBORD ID="10001" QTY=2 SIZE="Actual" />
          <ODRITEM ID="10001" TYPE="Script" />
            <SCRIPT>
              <!DOCTYPE HTML PUBLIC "-//IETF//DTD HTML 2.0//EN">
              <html>
                <head>
                  <title>Order Confirmation</title>
                </head>
                <body>
                  <h1>Order Confirmation</h1>
                  <p>Your order has been received. Your order number is 1000100033000101. Your order will be shipped as soon as possible. Thank you for your business.</p>
                </body>
              </html>
            <SCRIPT>
          <ODRITEM ID="10002" TYPE="Image">
            <IMAGE ID="PS01/1990101ABC123" HREF="/image/123.jpg" />
          <ODRITEM ID="10003" TYPE="Image">
            <IMAGE ID="CANON/PS01/1990101ABC123" HREF="/image/123.jpg" />
          <SUBORD>
            <SUBORD>
              <SUBORD>
                <SUBORD>
                  <SUBORD>
                    <SUBORD>
                      <SUBORD>
                        <SUBORD>
                          <SUBORD>
                            <SUBORD>
                              <SUBORD>
                                <SUBORD>
                                  <SUBORD>
                                    <SUBORD>
                                      <SUBORD>
                                        <SUBORD>
                                          <SUBORD>
                                            <SUBORD>
                                              <SUBORD>
                                                <SUBORD>
                                                  <SUBORD>
                                                    <SUBORD>
                                                      <SUBORD>
                                                        <SUBORD>
                                                          <SUBORD>
                                                            <SUBORD>
                                                              <SUBORD>
                                                                <SUBORD>
                                                                  <SUBORD>
                                                                    <SUBORD>
                                                                      <SUBORD>
                                                                        <SUBORD>
              <SUBORD>
            <SUBORD>
          <SUBORD>
        <SUBORD>
      <SUBORD>
    <SUBORD>
  <SUBORD>
<CAML>

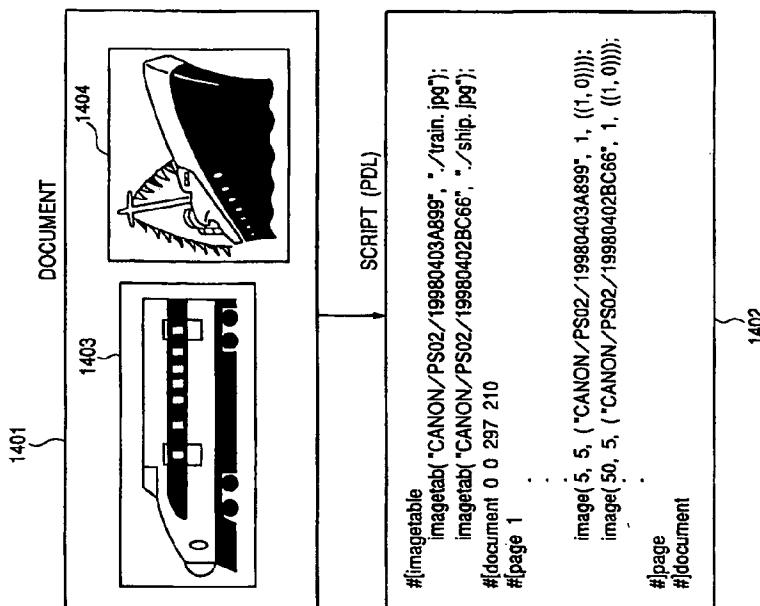
```

```

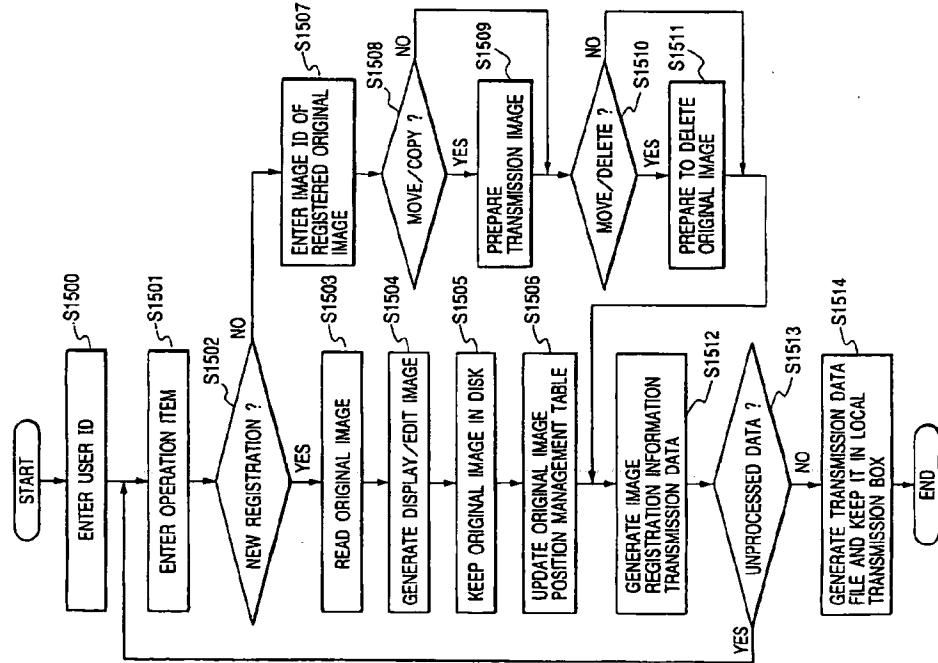
<CAML>
<TRANS ID="00010035375345">
  <SENDER ID="PS04" TIME="12/25/1997 10:55:26 JST"/>
  <RECIPIENT ID="CENTER"/>
</TRANS>
1315   <REG ID="CANON/PS04/01560770054" OPE="NEW" CUST="USR986999">
    <CAMLINK HREF="/image776996_99"/>
  <REG ID="CANON/PS04/01686000001" OPE="DEL" CUST="USR986999">
    <REG ID="CANON/PS04/04686000065"/>
    <REG ID="CANON/PS04/010353000065"/>
    <FTP ID="CANON/PS04/./images644dd.jpg"/>
</REG>
1316   <CAMLINK HREF="/image644dd.jpg"/>
</FTP>
<REPORT ID="USR887761/CENTER/0007 STATUS="FINISH"/>
1317   </CAML>
1318

```

FIG. 14



F/G. 15



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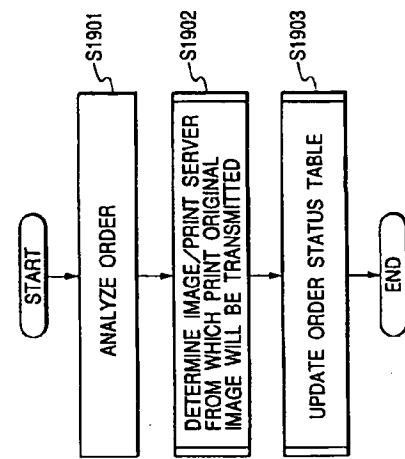
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F/G. 16

```

<REG ID=""/CANON/IS01/010353000051"
OPE="NEW"
CUST="1001080353000101"
SHOP="1001"
<CAMLINK HREF="./im012345.jpg"/>
</REG>
    
```

F/G. 19



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FIG. 17

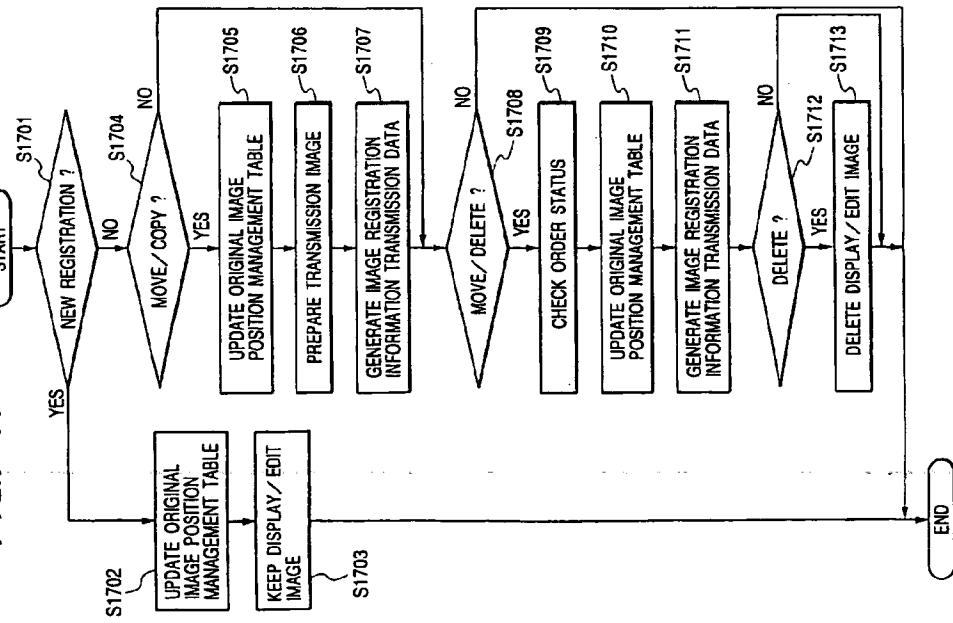


FIG. 18

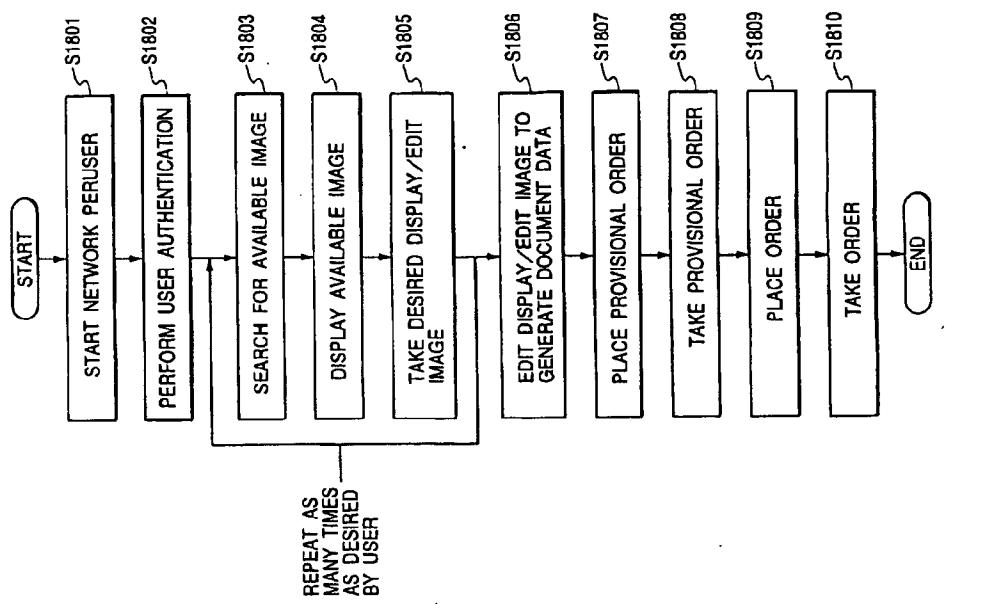
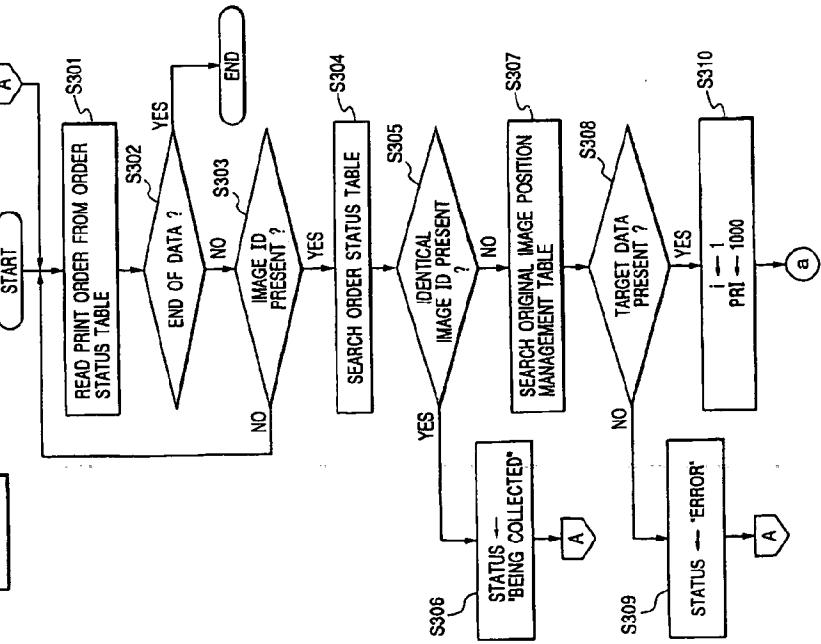
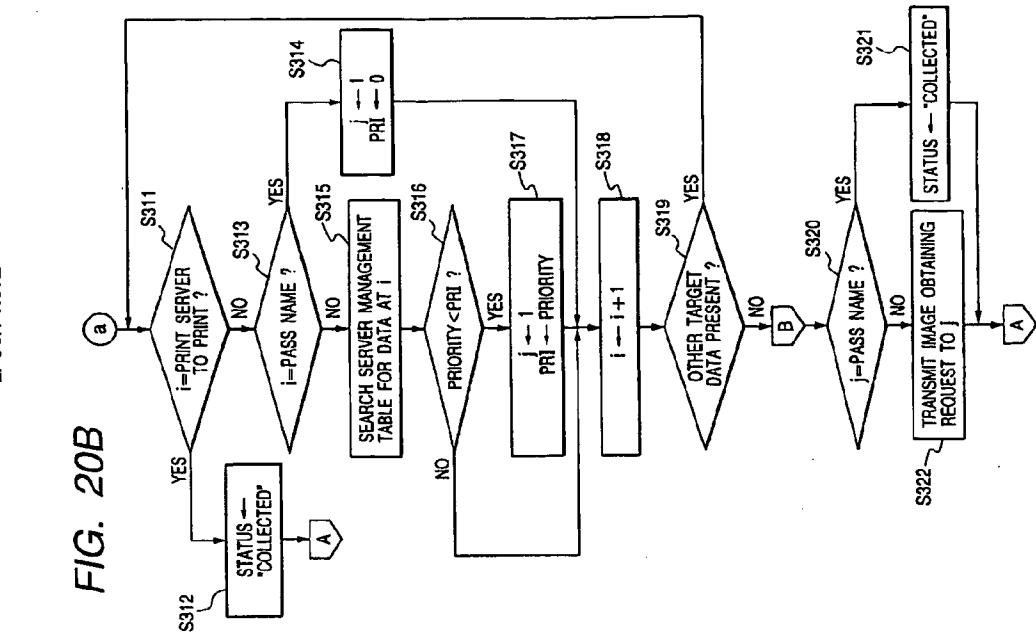
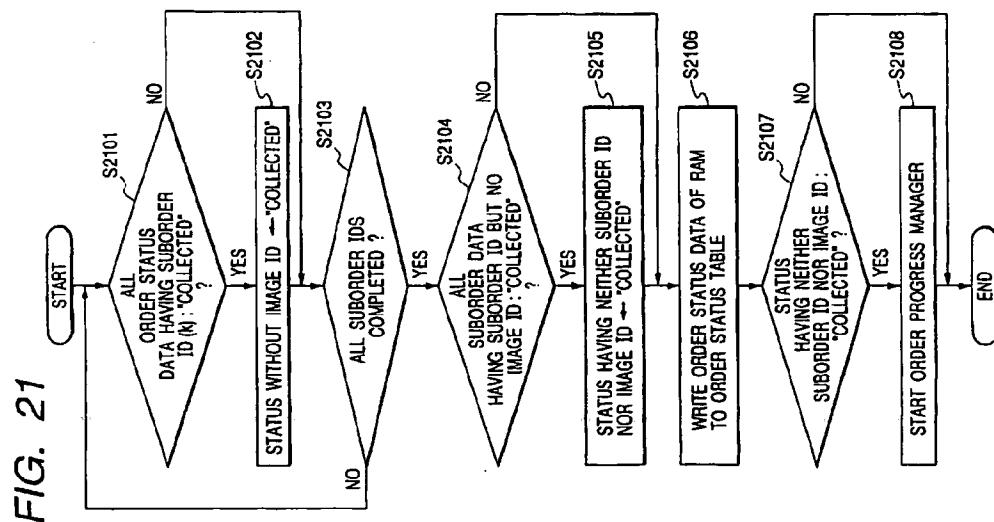
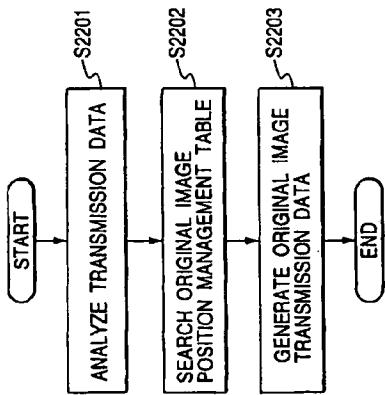


FIG. 20

| |
|-----------------|
| FIG. 20A |
| FIG. 20B |

**FIG. 20B**

**FIG. 22****FIG. 23**

```

<CAML>
<TRANS ID="00010035300001">
<SENDER ID="1504" TIME="12/20/1997 11:26:03 JST"/>
<RECEIVER ID="CENTER"/>
</TRANS>
<FTP ID="/">CANON/IS01/010353000051">
<CAMLINK HREF="./image123.jpg"/>
</FTP>
</CAML>
  
```

FIG. 24

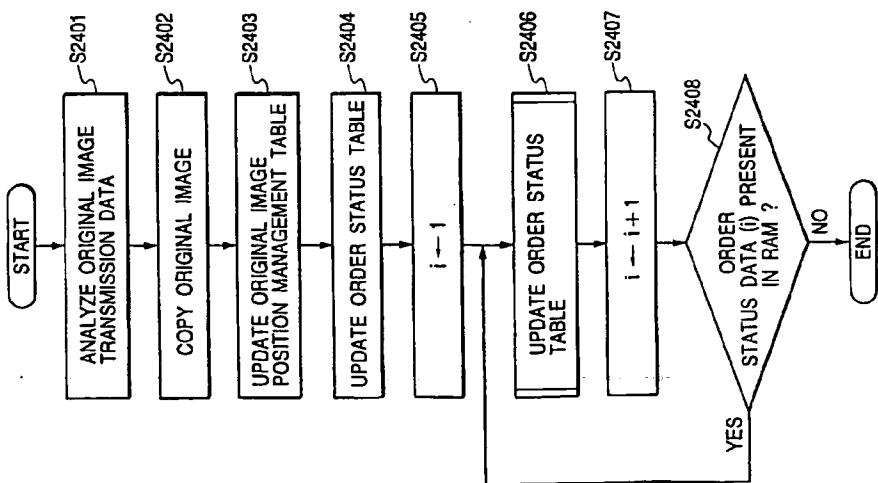


FIG. 25

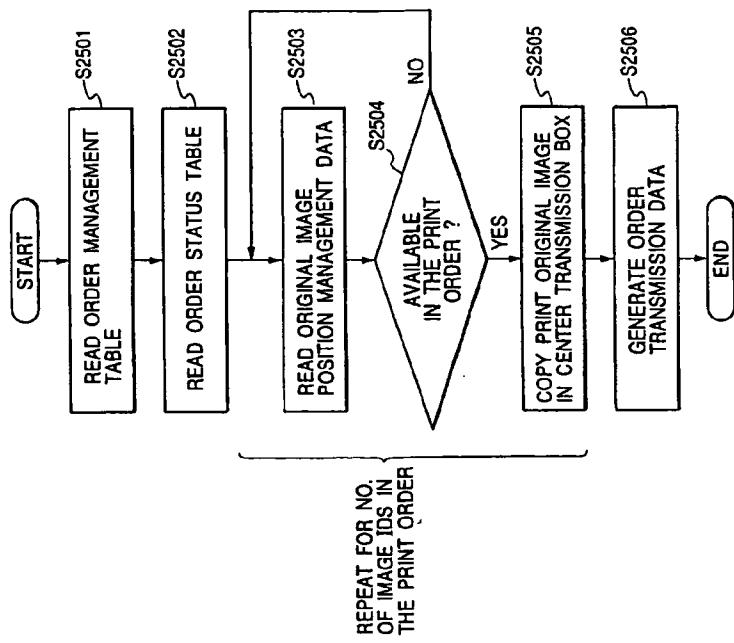


FIG. 26

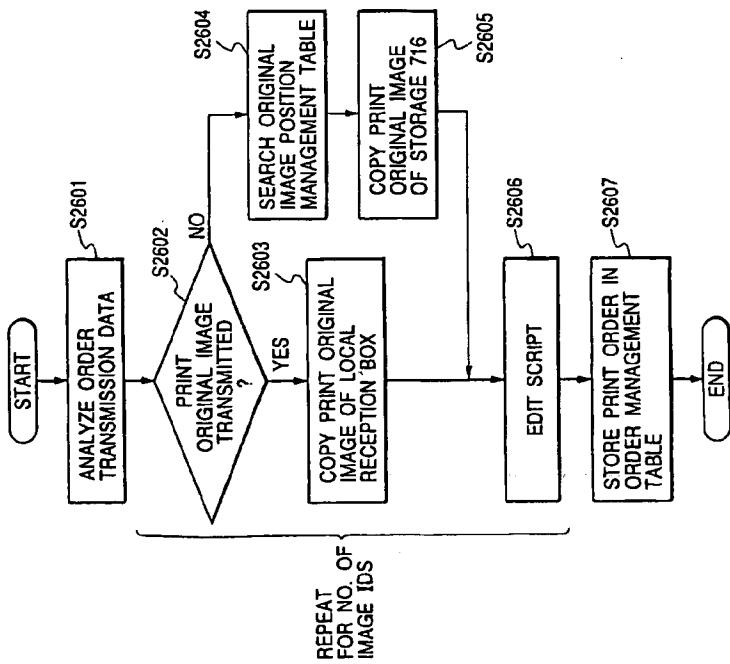


FIG. 27

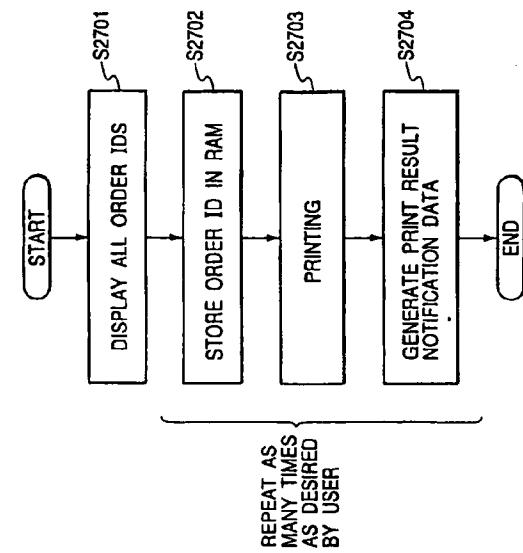


FIG. 28

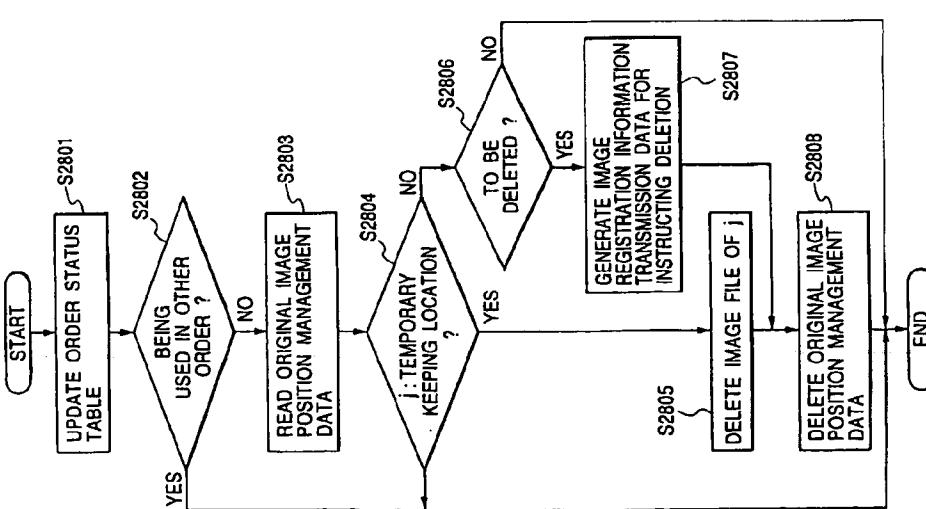
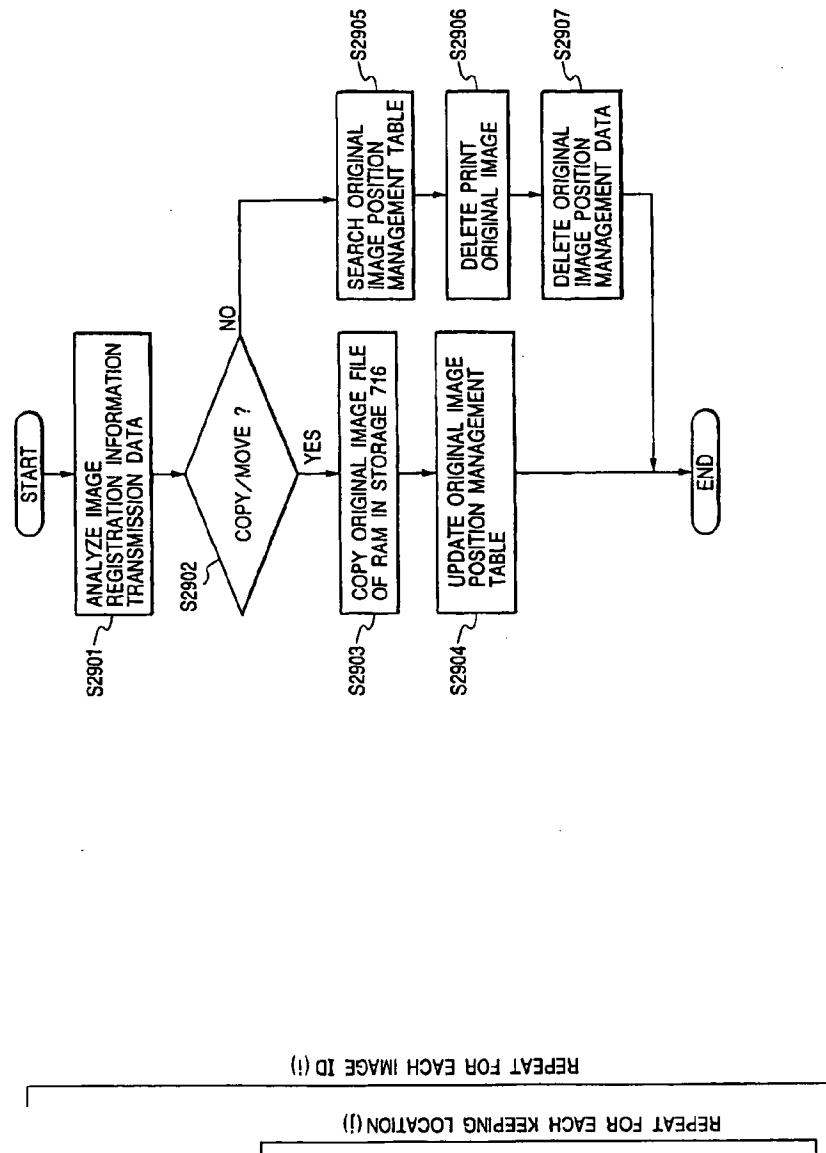


FIG. 29



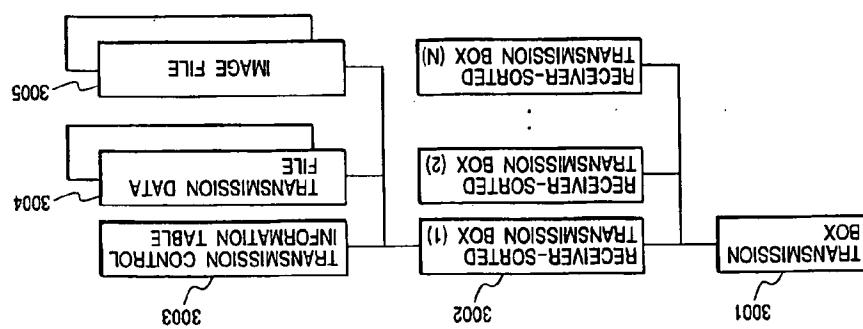


FIG. 30

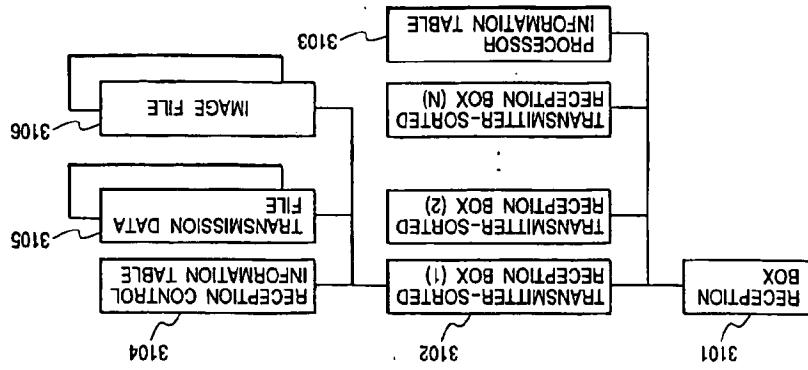


FIG. 31

FIG. 34

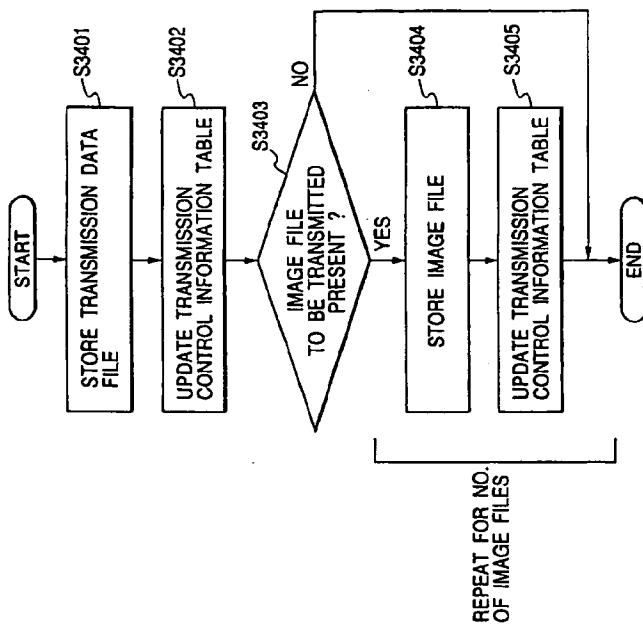
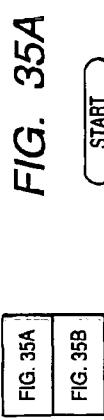


FIG. 33

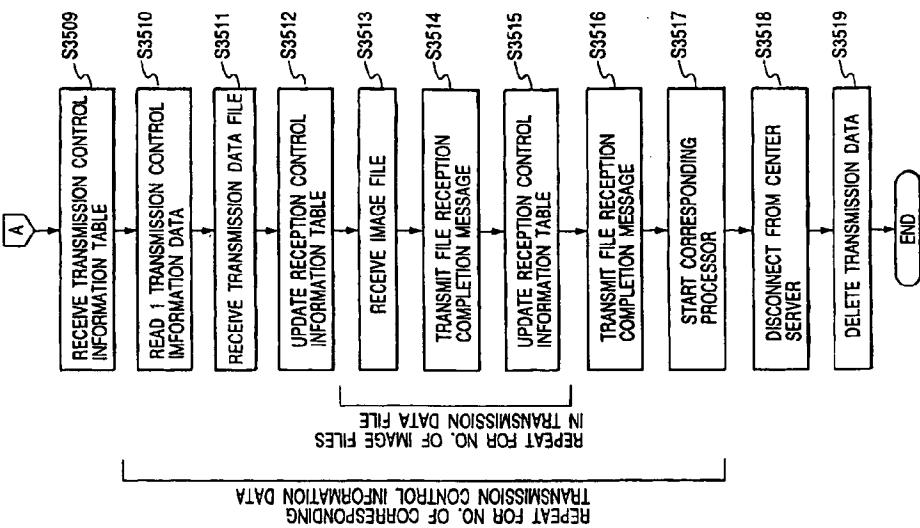
| TRANSMISSION | DATA TAG NAME | INFORMATION | DELIVERY DATA | PROCESSOR | STARTING METHOD | DELIVERER DATA |
|--------------|---------------|-------------|---------------|-----------|-----------------|----------------|
| 3301 | 3302 | 3303 | | | | |

FIG. 32

| FILE NAME | TRANSMISSION | DATA FILE NAME | DATA/TIME | FILE SIZE | BOX STOREAGE | RECEPTION | DATA/TIME | FILE NAME |
|-----------|--------------|----------------|-----------|-----------|--------------|-----------|-----------|-----------|
| 3201 | 3202 | 3203 | 3204 | 3205 | 3 | 3 | 3 | 3 |

FIG. 35

79

FIG. 35B

80

FIG. 36

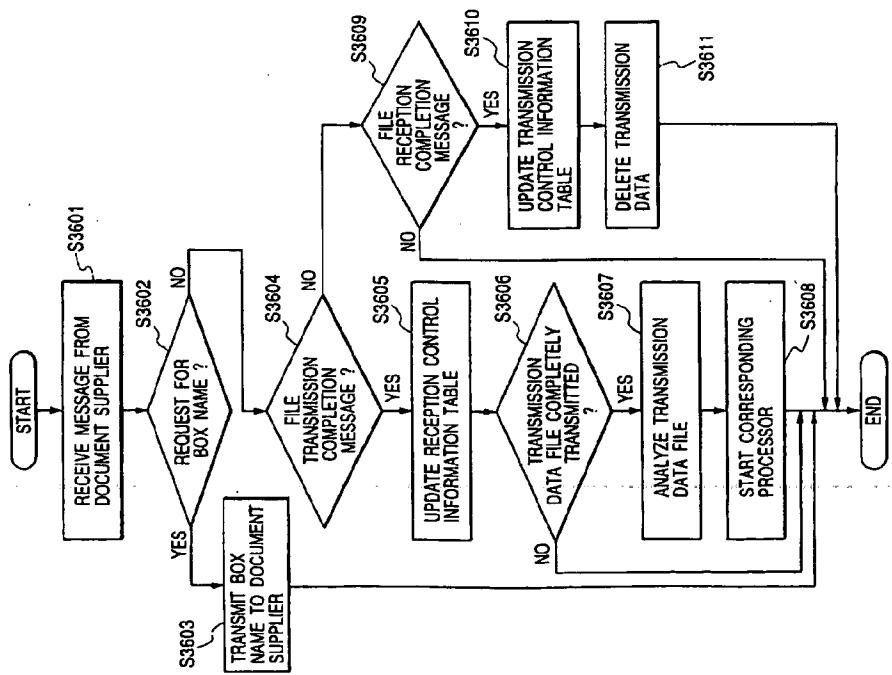
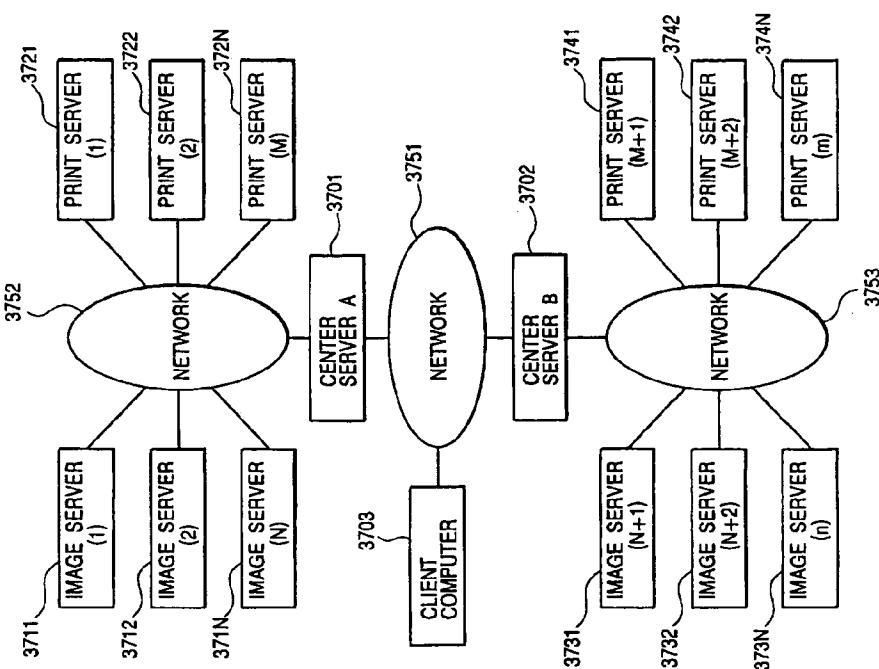


FIG. 37



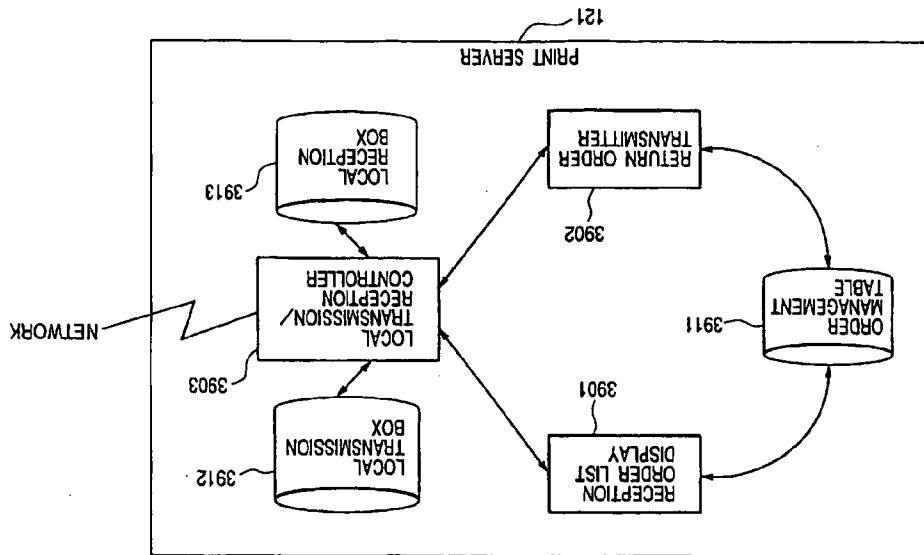


FIG. 39

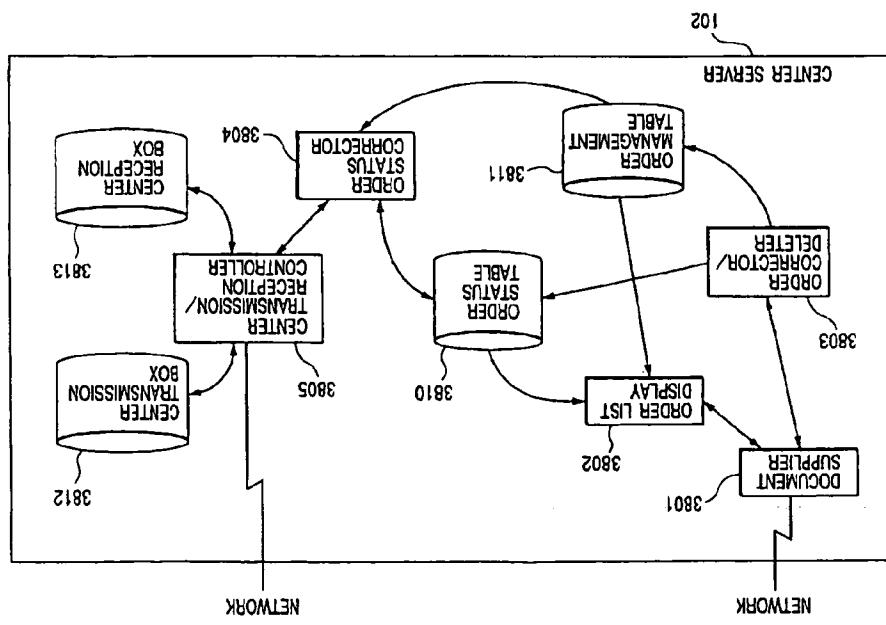
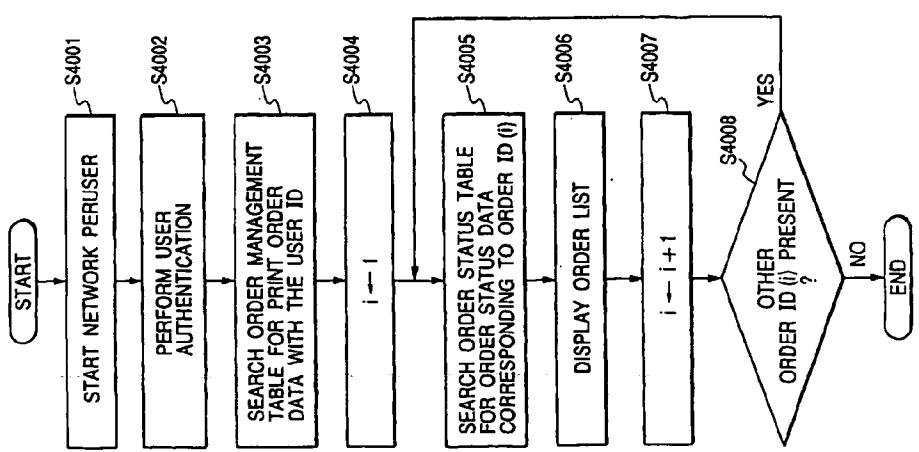


FIG. 38

FIG. 40

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FIG. 41

| ORDER CONFIRMATION WINDOW | | | | | | |
|--|-------------|-------------|---------------|--------------------|----------|-----------------|
| | | | | | | |
| | | | | | | |
| Log in: CANON TARD | | | | | | |
| 4105 ORDER ID | 4106 STATUS | 4107 OUTPUT | 4108 SHOP FEE | 4109 DATE OF ORDER | 4110 DUE | 4111 SHEET SIZE |
| 4112 COPIES | | | | | | |
| USR01/PC001/0015 BEING COLLECTED SERVER03 # 420.- 1998/09/16 1998/09/20 L 10 | | | | | | |
| USR01/PC001/0014 BEING COLLECTED SERVER01 # 525.- 1998/09/15 1998/09/17 2L 5 | | | | | | |
| USR01/PC001/0013 BEING PRINTED SERVER02 # 3.150.- 1998/09/10 1998/09/12 WIDE QUARTER 1 | | | | | | |
| USR01/PC001/0012 PRINTED SERVER01 # 3.150.- 1998/09/10 1998/09/12 WIDE QUARTER 1 | | | | | | |
| USR01/PC001/0011 BEING PRINTED SERVER02 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0010 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0009 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0008 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0007 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0006 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0005 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0004 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0003 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0002 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |
| USR01/PC001/0001 BEING PRINTED SERVER01 # 1.575.- 1998/09/13 1998/09/16 POSTCARD 30 | | | | | | |

FIG. 42

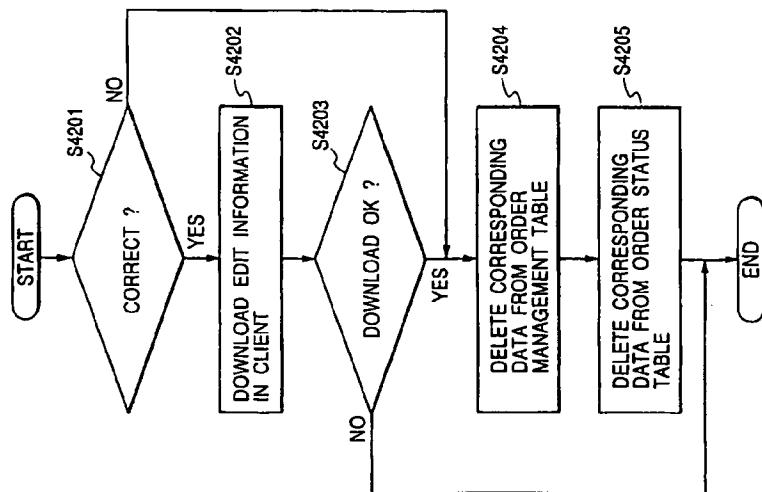


FIG. 43

| RECEPTION ORDER LIST WINDOW | | | | | | |
|-----------------------------|---------------|----------|------------|------------------|----------|-------------------------|
| 4305 | 4306 | 4307 | 4308 | 4309 | 4310 | SERVICE02 |
| ORDER ID | NAME | CUSTOMER | FEES | DATE OF
ORDER | DUES | SIZE
SHEET
COPIES |
| USR01/PC001/0013 | CANON TRAD | * 1575.- | 1998/09/13 | 1998/09/16 | POSTCARD | 30 |
| USR01/PC002/0028 | CANON YOSHINO | * 1575.- | 1998/09/13 | 1998/09/16 | POSTCARD | 300 |
| USR01/PC031/0120 | EOS | * 625.- | 1998/09/13 | 1998/09/16 | 2L | 5 |
| USR01/PC101/0001 | Autoboy | * 420.- | 1998/09/16 | 1998/09/20 | L | 10 |
| | | | | | | |
| | | | | | | |

4301

4203

4312

4302

4315

4314

4313

4311

4309

4308

4307

4306

4305

4316

4315

4314

4313

4311

4310

4304

FIG. 44

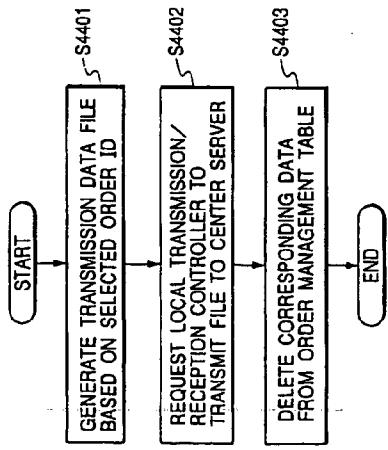


FIG. 46

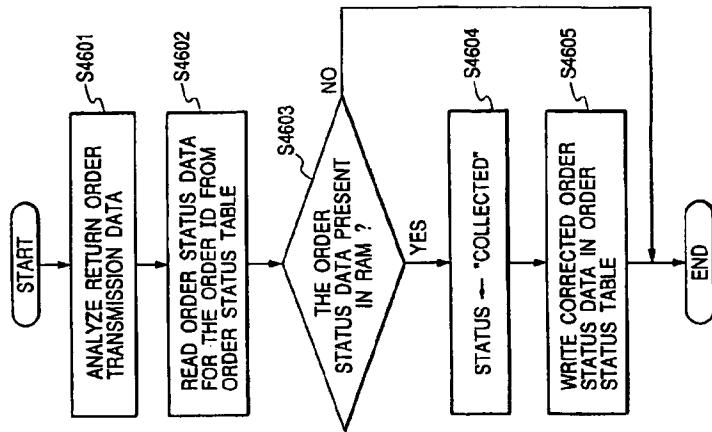


FIG. 45

4501 {

```

<CAML>
<ORDER ID="USR01/PC001/0013" SHOP="PS01" OPE="CANCEL"
CUST="1001060353000101" DATE="1997/12/01" CHARGE="2300">
</ORDER>
</CAML>
  
```

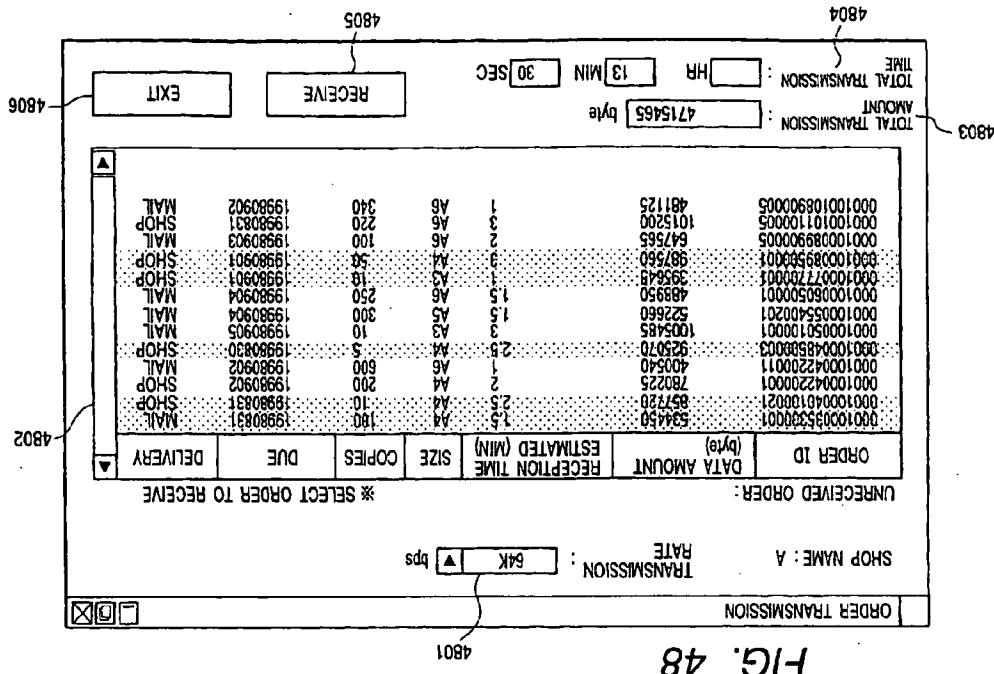


FIG. 48

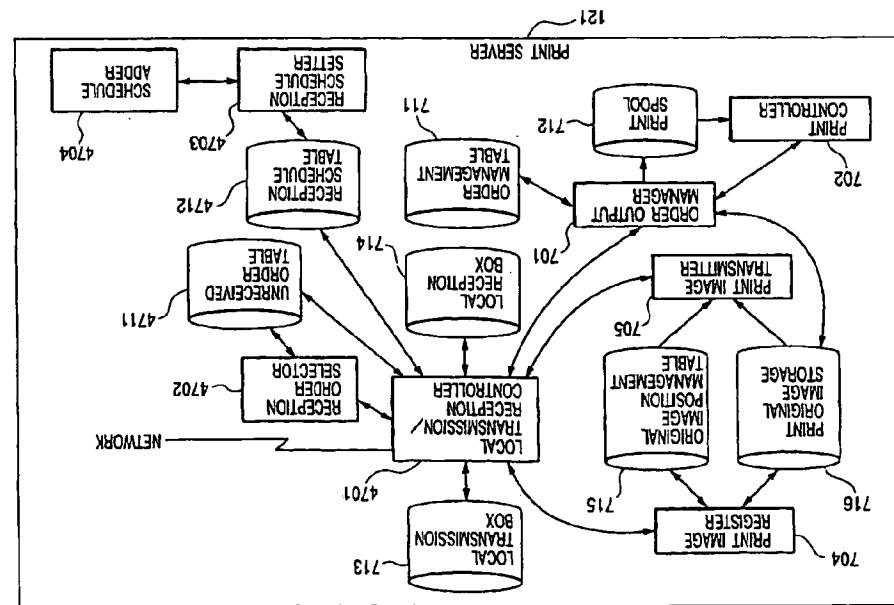


FIG. 47

FIG. 49

4901

| | | |
|---|--|--|
| <input type="checkbox"/> AUTO ORDER TRANSMISSION | <input checked="" type="checkbox"/> RECEIVE MANUALLY | <input type="checkbox"/> RECEIVE AUTOMATICALLY |
| 4902 | | |
| TOTAL TRANSMISSION AMOUNT MAX: <input type="text" value="2000000"/> byte
TOTAL TRANSMISSION TIME MAX: <input type="text" value="30"/> MIN <input type="text" value="HR"/> HR
TOTAL COPIES MAX: <input type="text" value="200"/> SHEETS (A4) | | |
| 4903 | | |
| RECEPTION SCHEDULE
EVERY MON, TUE, WED, THU, FRI 06:00 AM 10:00 AM
<input type="button" value="ADD"/> 4906 | | |
| 4907 | | |
| <input type="button" value="SET"/> 4908
<input type="button" value="CANCEL"/> 4909 | | |

FIG. 50

5001

5002

5003

5004

5005

| | | |
|--|--------------------------------|---|
| <input type="checkbox"/> ADD RECEPTION SCHEDULE | <input type="checkbox"/> CLOSE | <input checked="" type="checkbox"/> ADD |
| TIME <input type="text" value="10 : 30"/> PM | | |
| EVERY <input type="button" value="MON"/> <input type="button" value="TUE"/> <input type="button" value="WED"/> <input type="button" value="THU"/> <input type="button" value="FRI"/> <input type="button" value="SAT"/> <input type="button" value="SUN"/> | 1 | 2 |
| | 3 | 4 |
| | 5 | 6 |

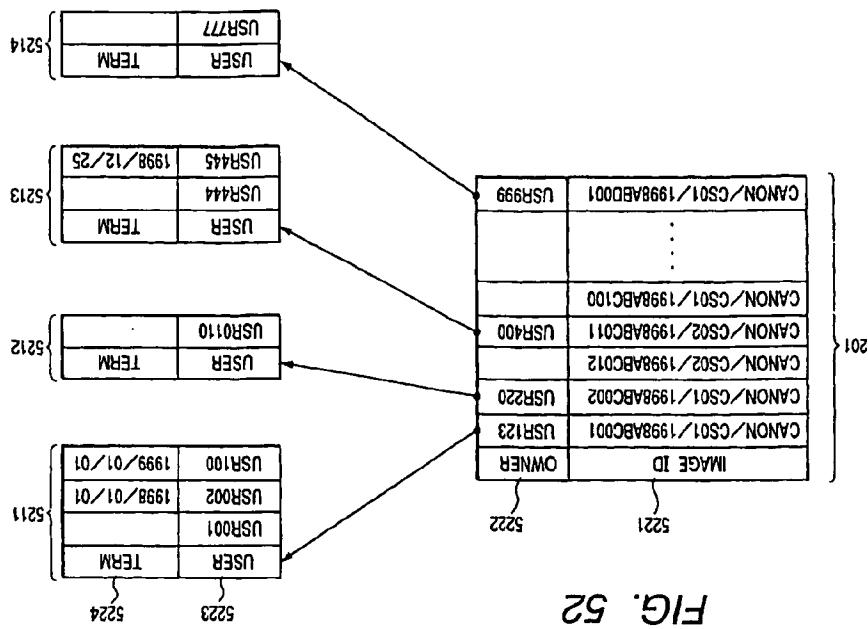


FIG. 52

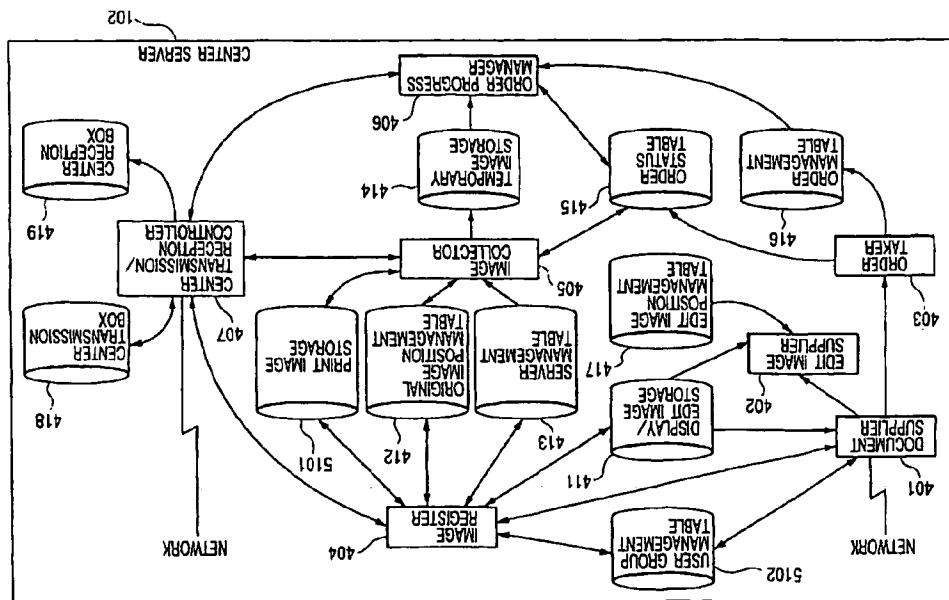


FIG. 51

FIG. 53

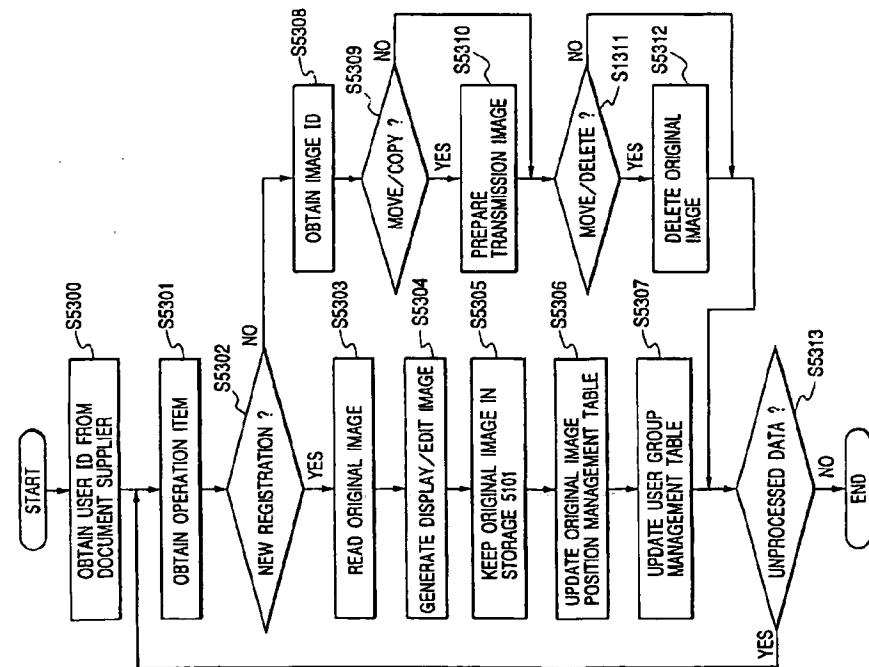


FIG. 54

